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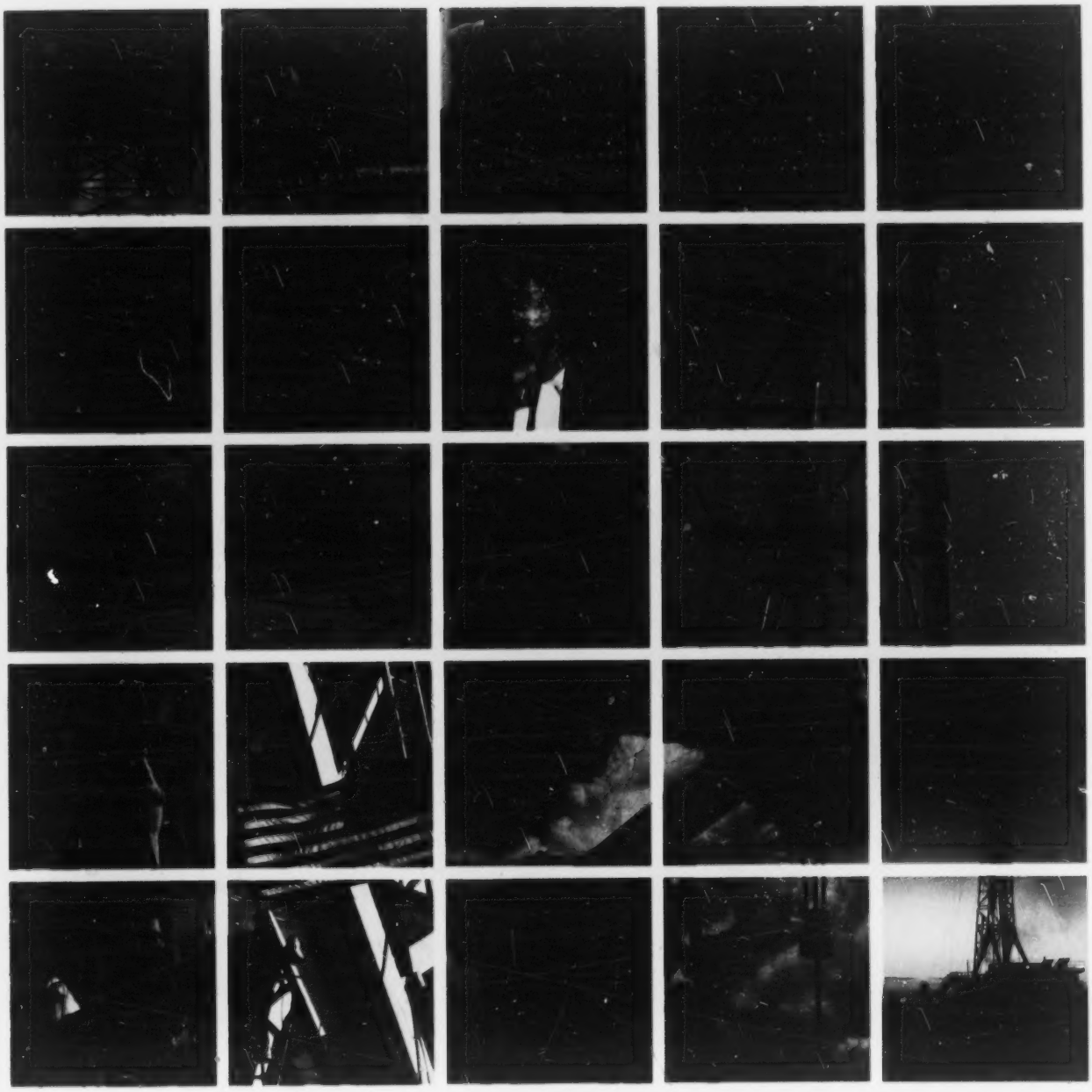

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The Oil & Natural Gas Producing Industry In Your State

Vol. 60 **No. 8**

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Chairman's Page

By C. Paul Hilliard

You are holding the 51st edition of an outstanding reference work for anyone interested in the domestic petroleum industry. Importantly, it's a publication shaped by its readers—and continually changes to better explain the dynamic business of finding and producing domestic energy resources.

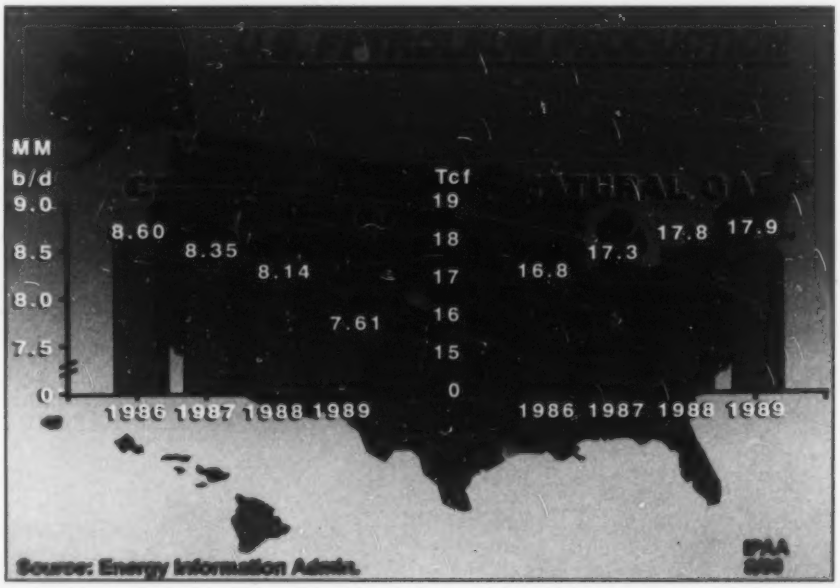
The Independent Petroleum Association of America's "The Oil and Natural Gas Producing Industry in Your State" is the only annual publication of its kind that even attempts to bring together all available data on oil and natural gas exploration and production—*state by state.*

In most publications covering our industry, you must glean through pages and pages of charts, to find only a handful of numbers when you finally locate your state. In this publication, thanks to three months of impressive statistical analyses and research by IPAA's Department of Petroleum Information Services, all 33 producing states receive detailed coverage.

In addition, although once focused primarily on oil, this special annual publication now includes an increasing amount of information about natural gas. IPAA changed the publication's name in 1984, adding the words natural gas to the September edition of Petroleum Independent magazine. Each year IPAA also adds a new table or two. This issue, for example, includes a table showing natural gas consumption by individual states. We've broadened the statistical summary tables, too. They now have more historic natural gas data.

Today's events in the Persian Gulf and the changes affecting our industry make this publication even more important. The steep decline in domestic crude oil production in the past few years has overshadowed the slight increase in natural gas output, as shown in the chart below. With a comprehensive energy policy hopefully emerging from the federal government—and with new technologies now available in the oil patch—independent producers will be better prepared to help the nation return to a stronger and more stable domestic source of oil and natural gas.

This special annual edition is a small contribution to the industry the association has represented faithfully since 1929. And as 10,000 independents and their supporting cast of thousands of suppliers and service companies plan their 1991 business activities, we hope it helps them see where they stand today, to better meet the challenges and competition of the decade ahead.



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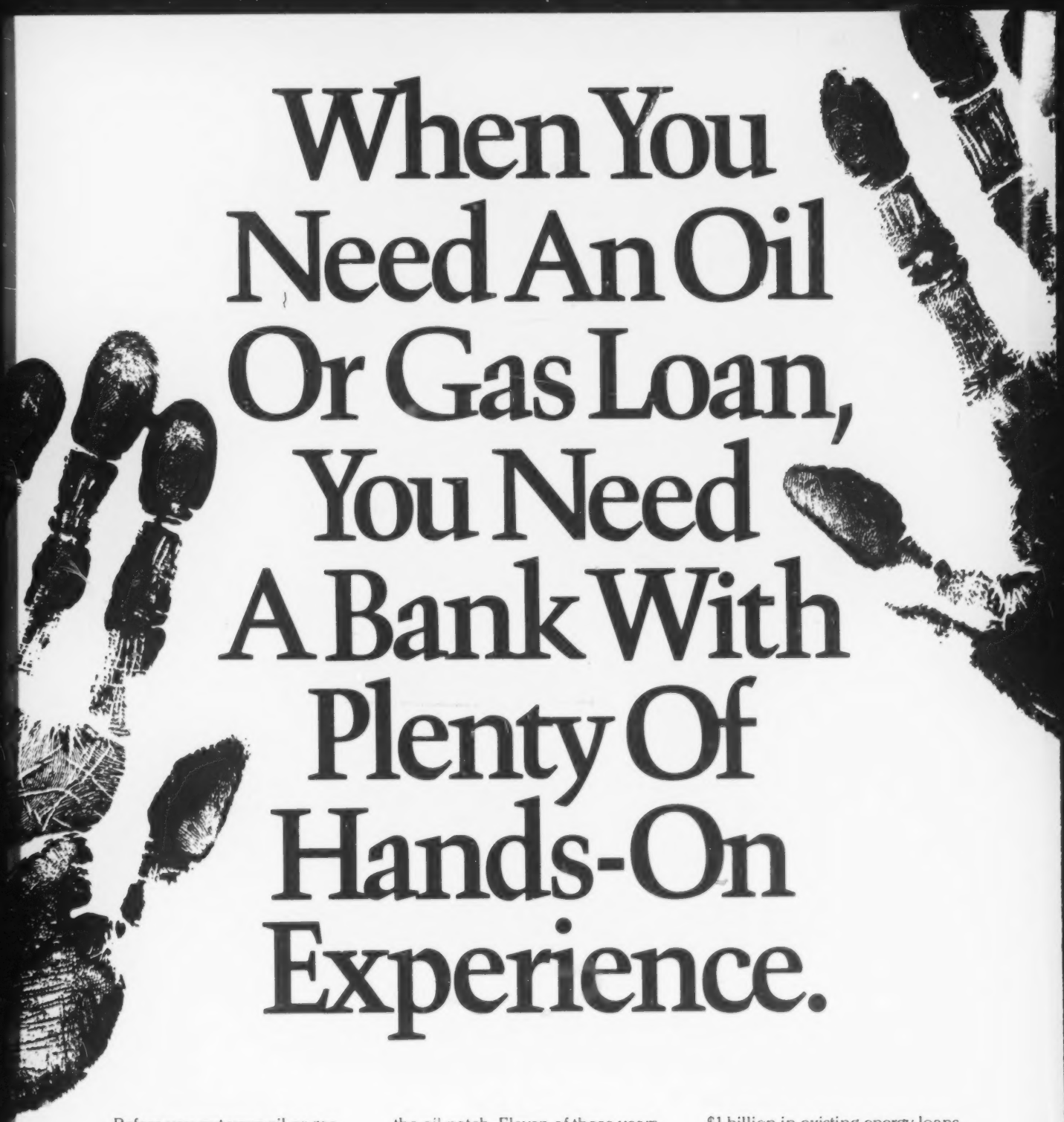

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Contents

Chairman's Page 3

The Year In Review 9

Statistical Summary

Oil Summary 10
Natural Gas Summary 11
Drilling Summary 12

Petroleum Statistics

United States 14
Alabama 18
Alaska 20
Arizona 22
Arkansas 24
California 26
Colorado 28
Florida 30
Illinois 32
Indiana 34
Kansas 36
Kentucky 38
Louisiana 40
Maryland 42
Michigan 44
Mississippi 46
Missouri 48
Montana 50
Nebraska 52
Nevada 54
New Mexico 56
New York 58
North Dakota 60
Ohio 62
Oklahoma 64
Oregon 66
Pennsylvania 68
South Dakota 70
Tennessee 72
Texas 74
Utah 76
Virginia 78
West Virginia 80
Wyoming 82

Exploration and Drilling

Seismic Exploration Activity 84
Rotary Rigs Operating 85
New-Field Wildcat Wells Drilled 86
Exploratory Wells Drilled 87
Development Wells Drilled 88
Total Wells Drilled 90

Financial

Cost of Drilling & Equipping Wells 91
Drilling Summary 1988 92
Financial Statistics 92
Severance and Production Taxes 93

Production

Crude Oil Production by Chase Group 92
Producing Crude Oil Wells 94
Producing Natural Gas Wells 95
Crude Oil Production 96
Natural Gas Production 97

Stripper Wells

Stripper Well Production 98
Producing Stripper Wells 100

Prices

Crude Oil Wellhead Prices 101
Natural Gas Wellhead Prices 102
Refiner Acquisition Cost of Crude Oil 103
Retail Gasoline Prices 103
Wholesale Prices—Total U.S. 104
Wholesale Prices—East of California 105

Consumption

Product Consumption—1989 106
Natural Gas Consumption 108

Miscellaneous

World Crude Oil Reserves 99
Industry Employment—1989 109
Glossary 110
Peak Year Milestones 111

Reference Information

Abbreviations/Conversions 17
Data Sources 17
Advertisers' Index 111

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The Year In Review

By Deborah Rowell

As the decade of the 1980s drew to a close, the U.S. petroleum industry survived another very difficult year. Drilling activity and production continued to fall precipitously. However, petroleum prices stabilized somewhat because there was a perception that members of the Organization of Petroleum Exporting Countries (OPEC) finally were serious about adhering to their production quotas.

U.S. wellhead crude oil prices averaged $15.85 per barrel in 1989. This is up 26 percent from the 1988 annual average of $12.58 per barrel. Natural gas wellhead prices rose slightly in 1989 to an annual average of $1.71 per thousand cubic feet (Mcf).

During the first half of 1990, oil prices deteriorated as OPEC supplies exceeded quota limits. The Iraqi invasion of Kuwait on August 2, led to an almost immediate price increase of more than 50 percent. However, recent trends in monthly data are not apparent in this publication, which is limited in scope to 1989 annual averages. The effects of the ongoing Persian Gulf Crisis will be reflected in the 1990 statistics compiled for next year's edition.

Despite the relative short-run price stability in 1989, concern about a long-term collapse in oil prices caused domestic drilling activity to languish last year. The rotary rig count set a modern-day low in 1989 at an annual average of 869 rigs. The previous low was in 1987 and 1988, when the average was 936 both years.

In August 1989, a majority of active rotary rigs were drilling for natural gas instead of oil. It was the first time that the ratio shifted since Baker Hughes began tracking rig data by segment in 1987.

The seismic crew count, one of the main indicators of future exploration activity, dropped 18 percent in 1989. There were 1,392 land and marine crew-months worked during the year. In June 1989, the seismic crew count fell to the lowest point since recordkeeping started in 1974.

The latest available drilling estimates (as of publication date) indicate that there were only 26,586 total well completions in 1989, down 17 percent from the prior year. This is only about one-third the level of 1985, and the worst drilling year since World War II. Annual well completions in the U.S. peaked in 1981 at 91,600. Since then, drilling levels have fallen steadily, except for 1984 when there was a brief turn-around.

The prolonged decline in exploration and drilling activity has caused an acceleration in the downward spiral of U.S. crude oil production. There were 7.6 million barrels per day (MM b/d) produced in 1989, the lowest annual average in more than 25 years. Compared to 1988, crude oil output dropped by 538,000 b/d, which is the largest annual decline in history.

Since 1985, the year before the oil price collapse, domestic crude oil production has fallen by nearly 1.4 MM b/d or 15 percent on the basis of annual averages. The 1988-89 drop in crude oil output of nearly ten percent is significantly higher than the average annual decline rate of three percent since 1985.

In contrast to crude oil, natural gas marketed production increased slightly in 1989, to an average of nearly 18 trillion cubic feet (Tcf), up from 17.8 Tcf in 1988. Regulatory constraints and deliverability factors continue to be problems for the natural gas industry.

There were 603,356 crude oil wells producing at the end of 1989, or 20,231 fewer wells than the year before. The effects of the drilling collapse of the past few years, and the continued abandonment of marginal wells, has began to show up in the statistics.

By contrast, the number of producing natural gas wells continued to climb steadily to 261,139 wells, up two percent from 1988. Although 1989 was the twenty-second consecutive year that a new record has been set for producing natural gas wells, the rate of growth has slowed dramatically from the nine percent gain made in 1985.

TOP PETROLEUM PRODUCING STATES
% CHANGES 1988-1989

	Seismic Crews	Rotary Rigs Active	Total Wells Drilled	Producing Wells
Texas	- 4.2%	-16.4%	- 6.4%	- 46.9%
Alaska	-16.0%	-18.3%	- 8.3%	- 4.5%
Louisiana	-29.6%	-32.3%	-14.6%	- 13.9%
California	-11.4%	-17.6%	-10.3%	- 1.5%
Oklahoma	- 0.9%	-17.7%	- 3.2%	- 48.0%
Wyoming	- 1.4%	-24.7%	- 8.1%	- 6.1%
New Mexico	- 0.6%	+ 2.4%	- 2.7%	+ 44.1%
Kansas	- 5.8%	-19.4%	- 7.5%	+625.6%
TOTAL U.S.	- 1.2%	-17.4%	- 7.2%	- 17.7%

Statistical Oil Summary

	PRODUCTION			TOTAL IMPORTS	OTHER SUPPLY	TOTAL SUPPLY	DOMESTIC DEMAND	EXPORTS	TOTAL DEMAND	CRUDE RESERVES		OIL WELL-HEAD PRICE
	Crude Oil	NGL	Total							Proved Reserves	New Reserves	
	(thous. b/d)									(mill. bbls.)		($/bbl.)
1948	5,520	401	5,921	514	93	6,528	5,798	368	6,166	22,280	3,795	2.60
1949	5,046	430	5,476	645	46	6,167	5,809	327	6,136	24,649	3,188	2.54
1950	5,407	499	5,906	850	100	6,856	6,556	305	6,861	25,268	2,563	2.51
1951	6,158	561	6,719	844	57	7,620	7,065	422	7,487	27,468	4,414	2.53
1952	6,236	611	6,867	952	28	7,847	7,280	432	7,712	27,961	2,749	2.53
1953	6,458	654	7,112	1,034	30	8,176	7,608	402	8,010	28,945	3,296	2.68
1954	6,342	691	7,033	1,052	32	8,117	7,764	355	8,119	29,561	2,873	2.78
1955	6,807	771	7,578	1,248	44	8,870	8,464	368	8,832	30,012	2,871	2.77
1956	7,151	800	7,951	1,436	52	9,439	8,783	430	9,213	30,435	2,974	2.79
1957	7,170	808	7,978	1,574	61	9,613	8,827	568	9,395	30,300	2,425	3.09
1958	6,710	807	7,517	1,700	65	9,282	9,118	276	9,394	30,536	2,608	3.01
1959	7,054	879	7,933	1,780	86	9,799	9,526	211	9,737	31,719	3,667	2.90
1960	7,035	929	7,964	1,815	147	9,926	9,798	202	10,000	31,613	2,365	2.88
1961	7,183	991	8,174	1,917	179	10,270	9,976	174	10,150	31,759	2,658	2.89
1962	7,332	1,021	8,353	2,082	175	10,610	10,400	168	10,568	31,389	2,181	2.90
1963	7,542	1,098	8,640	2,123	202	10,965	10,743	208	10,951	30,970	2,174	2.89
1964	7,614	1,155	8,769	2,258	217	11,244	11,023	202	11,225	30,991	2,665	2.88
1965	7,804	1,210	9,014	2,468	220	11,702	11,513	187	11,700	31,352	3,048	2.86
1966	8,295	1,284	9,579	2,573	246	12,398	12,085	198	12,283	31,452	2,964	2.88
1967	8,810	1,409	10,219	2,537	293	13,049	12,560	307	12,867	31,377	2,962	2.92
1968	9,096	1,504	10,600	2,840	347	13,787	13,393	231	13,624	30,707	2,455	2.94
1969	9,238	1,590	10,828	3,166	339	14,333	14,137	233	14,370	29,632	2,120	3.09
1970	9,637	1,660	11,297	3,419	355	15,071	14,697	259	14,956	39,001	2,689	3.18
1971	9,463	1,694	11,157	3,925	438	15,520	15,213	224	15,437	38,063	2,318	3.39
1972	9,441	1,744	11,185	4,741	431	16,357	16,367	222	16,589	36,339	1,558	3.39
1973	9,208	1,738	10,946	6,256	472	17,674	17,308	231	17,539	35,300	2,146	3.89
1974	8,774	1,688	10,462	6,112	478	17,052	16,652	221	16,873	34,250	1,994	6.87
1975	8,375	1,632	10,007	6,056	631	16,694	16,322	209	16,531	32,682	1,318	7.67
1976	8,132	1,604	9,736	7,313	577	17,626	17,461	223	17,684	30,942	1,085	8.19
1977	8,245	1,618	9,863	8,787	552	19,202	18,431	243	18,674	31,780	1,140	8.57
1978	8,707	1,567	10,274	8,202	476	18,952	18,847	362	19,209	31,355	2,583	9.00
1979	8,552	1,583	10,135	8,389	570	19,094	18,516	471	18,987	29,810	1,410	12.64
1980	8,597	1,573	10,170	6,865	660	17,695	17,056	544	17,600	29,805	2,970	21.59
1981	8,572	1,609	10,181	5,740	646	16,567	16,058	595	16,653	29,426	2,570	31.77
1982	8,649	1,550	10,199	4,948	643	15,790	15,296	815	16,111	27,858	1,382	28.52
1983	8,688	1,559	10,247	4,817	737	15,801	15,231	739	15,970	27,735	2,897	26.19
1984	8,879	1,630	10,509	5,240	784	16,533	15,726	722	16,448	28,446	3,748	25.88
1985	8,971	1,609	10,580	4,949	758	16,287	15,726	781	16,507	28,416	3,022	24.09
1986	8,680	1,551	10,231	6,176	811	17,218	16,281	785	17,066	26,889	1,446	12.51
1987	8,349	1,595	9,944	6,605	841	17,390	16,665	764	17,429	27,256	3,240	15.40
1988	8,151	1,625	9,776	7,351	902	18,018	17,283	815	18,098	26,825	2,380	12.58
1989	7,613	1,546	9,159	8,005	921	18,085	17,303	881	18,184	N/A	N/A	15.85

Sources: Energy Information Administration and American Petroleum Institute

Notes: Imports to Strategic Petroleum Reserve are excluded Other supply includes refinery processing gain, unaccounted crude oil, and other hydrocarbons. Reserves estimated as of December 31st each year. In 1988, there was a significant downward revision in Alaskan natural gas reserves.

Natural Gas Summary

	NATURAL GAS								GAS RESERVES		GAS
	Marketed Production	Extraction Loss	Dry Production	Gas Imports	Other Supply	Total Supply	Exports	Consumption	Proved Reserves	New Reserves	WELL-HEAD PRICE ($/Mcf)
					(Bcf)						
1948	5,148	210	4,938	N/A	N/A	5,018	19	4,736	173,869	13,950	.07
1949	5,420	224	5,196	N/A	N/A	5,302	20	4,971	180,381	12,757	.06
1950	6,282	260	6,022	N/A	N/A	6,197	26	5,767	185,593	12,104	.07
1951	7,457	292	7,165	N/A	N/A	7,374	24	6,810	193,812	16,186	.07
1952	8,013	319	7,694	8	222	7,924	27	7,294	199,716	14,544	.08
1953	8,397	340	8,057	9	247	8,313	28	7,639	211,447	20,969	.09
1954	8,743	354	8,389	7	329	8,725	29	8,049	211,711	9,690	.10
1955	9,405	377	9,028	11	438	9,477	31	8,694	223,697	22,105	.10
1956	10,082	418	9,664	10	453	10,127	36	9,289	237,775	24,985	.11
1957	10,680	434	10,246	38	482	10,766	42	9,846	246,569	20,297	.11
1958	11,030	458	10,572	136	621	11,329	39	10,303	254,142	19,058	.12
1959	12,046	498	11,548	134	668	12,350	18	11,321	262,597	20,895	.13
1960	12,771	543	12,228	156	712	13,096	11	11,967	263,759	14,253	.14
1961	13,254	592	12,662	219	697	13,578	11	12,489	267,728	17,421	.15
1962	13,877	624	13,253	402	854	14,509	15	13,267	273,766	19,750	.16
1963	14,747	670	14,077	406	916	15,399	17	13,970	276,151	18,418	.16
1964	15,547	723	14,824	443	886	16,153	20	14,814	281,251	20,447	.15
1965	16,040	753	15,287	456	960	16,703	26	15,280	286,469	21,470	.16
1966	17,207	739	16,468	480	1,141	18,089	25	16,452	289,333	20,355	.16
1967	18,171	785	17,386	564	1,134	19,084	82	17,388	292,908	21,956	.16
1968	19,322	828	18,494	652	1,330	20,476	94	18,632	287,350	13,816	.16
1969	20,698	867	19,831	727	1,380	21,938	51	20,056	275,109	8,482	.17
1970	21,921	906	21,015	821	1,458	23,294	70	21,139	290,746	37,598	.17
1971	22,493	883	21,610	935	1,507	24,052	80	21,793	278,806	10,136	.18
1972	22,532	908	21,624	1,019	1,757	24,400	78	22,101	266,085	9,791	.19
1973	22,648	917	21,731	1,033	1,533	24,297	77	22,049	249,950	6,471	.22
1974	21,601	887	20,714	959	1,700	23,373	77	21,223	237,132	8,501	.30
1975	20,109	872	19,237	953	1,759	21,949	73	19,538	228,200	10,786	.45
1976	19,952	854	19,098	964	2,060	22,122	65	19,946	216,026	7,368	.58
1977	20,025	863	19,162	1,011	1,737	21,910	56	19,521	207,413	12,978	.79
1978	19,974	852	19,122	966	2,150	22,238	53	19,627	208,033	19,425	.91
1979	20,471	808	19,663	1,253	2,058	22,974	56	20,241	200,997	12,221	1.18
1980	20,180	777	19,403	985	2,127	22,515	49	19,877	199,021	16,723	1.59
1981	19,956	775	19,181	904	2,106	22,191	59	19,404	201,730	21,446	1.98
1982	18,520	762	17,758	933	2,309	21,000	52	18,001	201,512	17,288	2.46
1983	16,822	790	16,032	920	2,400	19,352	55	16,835	200,247	14,523	2.59
1984	18,230	838	17,392	843	2,208	20,443	55	17,951	197,463	14,409	2.66
1985	17,198	816	16,382	949	2,524	19,855	55	17,281	193,369	11,891	2.51
1986	16,791	800	15,991	750	1,951	18,692	61	16,221	191,586	13,827	1.94
1987	17,349	812	16,537	992	2,007	19,536	54	17,211	187,211	11,739	1.67
1988	17,808	816	16,992	1,294	2,371	20,657	74	18,028	168,024	-2,517	1.69
1989	17,943	841	17,102	1,378	2,724	21,204	70	18,956	167,116	16,075	1.71

Sources: Energy Information Administration and American Gas Association.

Notes: Reserves estimated as of December 31st each year. In 1988, there was a significant downward revision in Alaskan natural gas reserves.

Drilling Summary

	SEISMIC CREWS WORKING	ROTARY RIGS ACTIVE	EXPLORATORY COMPLETIONS			TOTAL WELL COMPLETIONS				TOTAL FOOTAGE DRILLED (mill. ft.)
			New-Field Wildcats	Total Exploratory	Oil Wells	Gas Wells	Dry Holes	Service Wells	Total Wells	
1948	N/A	2,157	4,296	8,013	22,585	2,897	12,026	2,270	39,778	137.4
1949	N/A	2,017	4,449	9,058	22,042	2,887	12,727	1,382	39,038	138.0
1950	N/A	2,154	5,290	10,306	24,430	2,843	14,757	1,249	43,279	159.3
1951	6,537	2,544	6,189	11,756	23,453	3,030	16,653	1,380	44,516	172.3
1952	7,958	2,641	6,698	12,425	23,466	3,255	17,618	1,482	45,821	187.2
1953	7,666	2,613	6,925	13,313	25,762	3,806	18,449	1,262	49,279	198.8
1954	6,863	2,508	7,380	13,100	29,773	3,974	19,168	1,012	53,927	219.0
1955	7,090	2,686	8,105	14,942	31,567	3,608	20,742	760	56,677	226.3
1956	6,813	2,620	8,742	16,207	30,737	4,543	21,797	1,049	58,126	233.9
1957	6,283	2,429	8,014	14,714	28,012	4,620	20,976	230	53,838	223.1
1958	5,064	1,923	6,950	13,199	24,578	4,803	19,043	1,615	50,039	198.2
1959	5,097	2,074	7,031	13,191	25,800	5,029	19,265	1,670	51,764	209.2
1960	4,625	1,750	7,320	11,704	21,186	5,258	17,574	2,733	46,751	190.7
1961	4,557	1,760	6,909	10,992	21,101	5,664	17,106	3,091	46,962	192.1
1962	3,915	1,637	6,794	10,797	21,249	5,848	16,682	2,400	46,179	198.6
1963	3,966	1,500	6,570	10,664	20,288	4,751	16,347	2,267	43,653	184.4
1964	4,102	1,502	6,623	10,747	20,620	4,855	17,488	2,273	45,236	189.9
1965	4,247	1,387	6,175	9,466	18,761	4,724	16,025	1,913	41,423	181.5
1966	3,672	1,273	6,158	10,313	16,447	4,167	15,770	2,152	38,536	165.5
1967	3,337	1,134	5,260	8,878	15,329	3,659	13,246	1,584	33,818	144.7
1968	3,268	1,169	5,205	8,879	14,331	3,456	12,812	2,315	32,914	149.3
1969	3,156	1,194	5,956	9,701	14,368	4,083	13,736	1,866	34,053	161.0
1970	2,340	1,028	4,829	7,436	13,043	4,031	11,099	1,369	29,542	142.0
1971	2,655	976	4,636	7,131	11,903	3,983	10,382	1,414	27,682	130.7
1972	3,016	1,107	5,011	7,551	11,437	5,484	11,013	1,486	29,420	142.5
1973	2,999	1,195	5,096	7,771	10,251	6,975	10,466	970	28,662	141.9
1974	3,662	1,471	5,946	8,969	13,644	7,168	12,205	1,398	34,415	156.7
1975	3,416	1,660	6,234	9,459	16,979	8,169	13,736	1,920	40,804	184.9
1976	3,140	1,656	5,856	9,317	17,697	9,438	13,805	1,674	42,614	190.9
1977	3,063	2,001	6,162	10,140	18,700	12,119	15,036	1,453	47,308	219.6
1978	4,148	2,255	6,731	11,030	19,065	14,405	16,591	1,610	51,671	242.5
1979	4,400	2,176	6,423	10,735	20,689	15,166	16,035	1,472	53,362	247.4
1980	4,962	2,910	7,332	12,870	32,120	17,132	20,234	2,076	71,562	316.4
1981	5,877	3,970	9,151	17,430	42,520	19,742	26,972	2,366	91,600	412.3
1982	5,676	3,105	7,386	15,882	38,388	18,584	25,545	2,212	84,729	377.6
1983	4,944	2,229	6,057	13,845	38,379	12,770	23,854	2,047	77,050	318.7
1984	4,655	2,428	6,528	15,138	43,967	14,943	25,251	2,251	86,412	370.8
1985	3,494	1,969	5,630	12,208	36,145	12,690	21,079	1,736	71,650	315.4
1986	2,016	964	3,484	7,156	18,388	8,008	12,250	834	39,480	179.1
1987	1,561	936	3,515	6,903	16,163	7,794	11,337	890	36,184	163.8
1988	1,512	936	3,265	6,702	13,112	8,190	9,936	934	32,172	154.9
1989	1,392	869	2,560	5,694	9,650	8,413	7,947	576	26,586	127.3

Sources: Drilling data from American Petroleum Institute and American Association of Petroleum Geologists.
Reserves from American Gas Association and
All other data from Energy Information Administration.

Notes: Drilling data include exploratory and development wells.
Reserves estimated as of December 31st each year.
In 1988, there was a significant downward revision in Alaskan natural gas reserves.

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The Energy People

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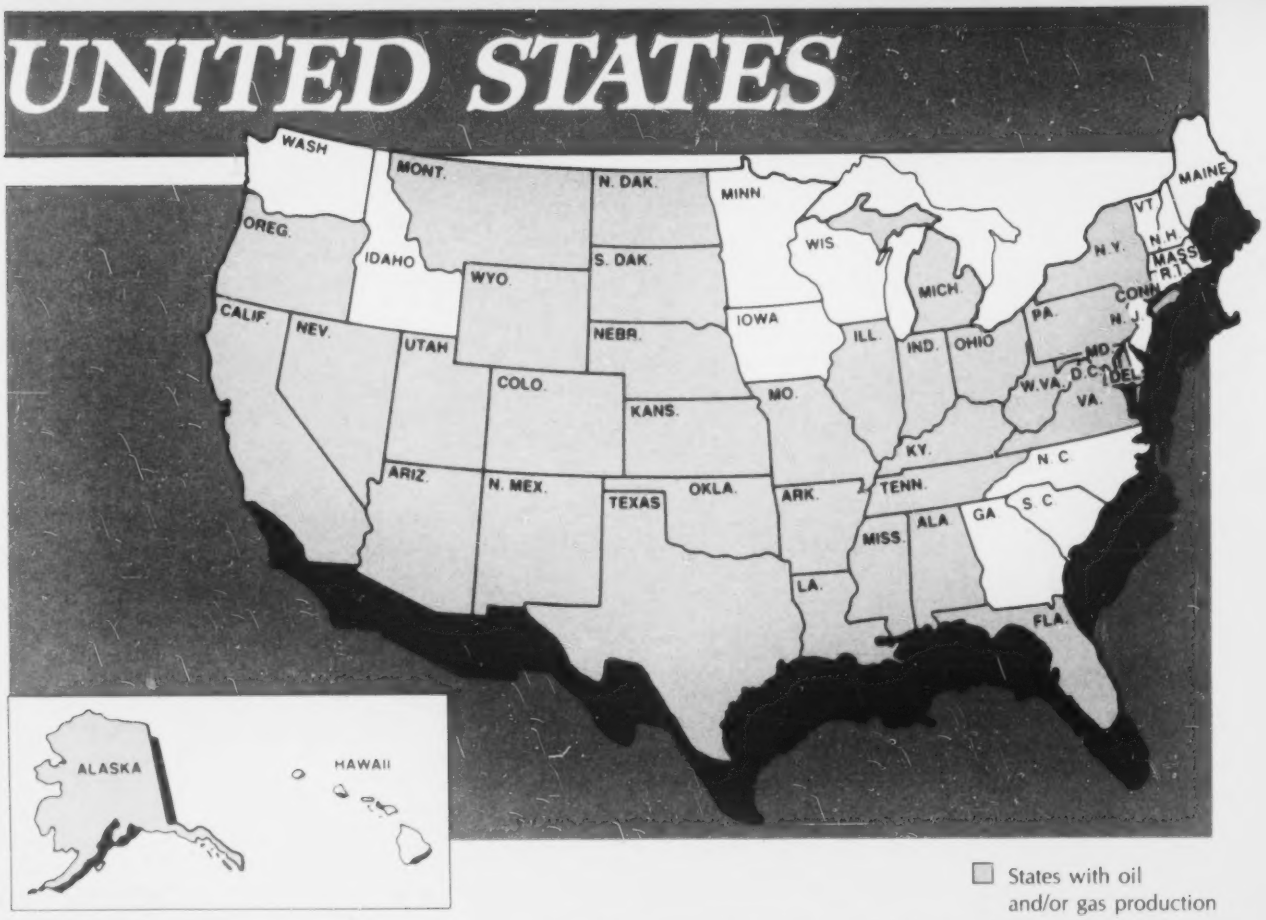
UNITED STATES



☐ States with oil and/or gas production

Background Information

Number of States 50
With oil and/or gas production 33

First year of production:
Crude oil ..... (Pennsylvania) 1859
Natural gas ..... (Pennsylvania). 1881

Year and amount of peak production:
Crude oil — 3,517,450 thous. bbls. 1970
Natural gas — 22,647,549 MMcf 1973

Deepest producing well: (ft.)
Crude oil ..... (Texas) 18,060
Natural gas ..... (Texas) 26,536

Year and depth of deepest well drilled: (ft.)
1974 ..... (Oklahoma) 31,441

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	1,763,657	57%
Gas wells	389,943	12%
Dry holes	955,318	31%
Total	3,108,918	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $1,183,660,241

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	174,888	33,378	208,266	901,345
Production	148,430	25,122	173,552	719,665

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $15.85
Natural gas ($/Mcf) $1.71

Wellhead value of 1989 production: (thous. $)
Crude oil $44,043,552
Natural gas $30,682,773
Total $74,726,325

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.63
Commercial consumers $4.79
Industrial consumers $2.92
Electric utilities $2.43
All consumers $4.18

Severance taxes paid in 1989 (thous. $) $3,821,059

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	579	9,071	9,650
Gas	645	7,768	8,413
Dry	3,856	4,091	7,947
Service	- -	576	576
Total	5,080	21,506	26,586

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	3,439.3	37,362.1	40,801.4
Gas	4,154.2	39,339.4	43,493.6
Dry	21,226.8	19,730.1	40,956.9
Service	- -	2,076.6	2,076.6
Total	28,820.3	98,508.2	127,328.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 2,560
New-field wildcat footage (thous. ft.) 15,444.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	- -
Production	- -	- -
Reserves (1988)	- -	- -

Seismic crew months worked 1,392
Average rotary rigs active 869

Number of producing wells: (12/31/89)
- Crude oil 603,356
  - Flowing 31,953
  - Artificial lift 571,403
- Natural gas 261,139
- Total 864,495

Average production:	thous. bbls.	thous. b/d
Crude oil	2,778,773	7,613
NGL	564,000	1,546
Total	3,342,773	9,159

Natural gas marketed production (MMcf) 17,943,142
Average output per producing well:
- Crude oil (bbls.) 4,592
- Natural gas (Mcf) 68,711

Average number of employees in:
- Oil and natural gas extraction 377,631
- Refining 129,968
- Transportation 184,999
- Wholesale 221,032
- Retail 670,713
- Total petroleum industry 1,584,343

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	2,380	845	3,225
Production	2,811	754	3,565
Net annual change	-431	91	-340
Proved reserves	26,825	8,238	35,063

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-22,119	20,156	-1,963
Production	3,192	14,274	17,466
Net annual change	-25,311	5,882	-19,429
Proved reserves	32,878	144,121	176,999

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	3,474,161	279,408	62.28
Gas	3,599,505	460,295	84.65
Dry	3,475,856	366,381	66.96
Total	10,549,522	354,713	70.23

Number of producing stripper wells 454,150
Number of stripper well abandonments 17,423

Stripper well crude oil production:
- (bbls.) 442,800,255
- (b/d) 1,209,387

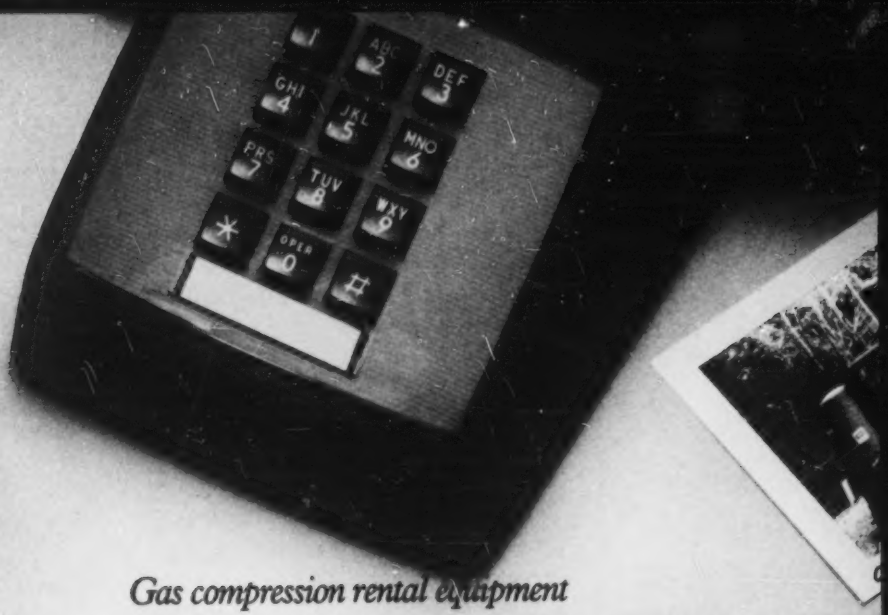
Percentage of oil produced by stripper wells 15%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
- Primary 2,075,047
- Secondary 1,774,650
- Total 3,819,697

Percentage of total value of principal mineral production:
- Crude oil — ranked 1st 31%
- Natural gas — ranked 2nd 26%

National Energy Contact

Energy Information Administration
Forrestal Building, Room 1F-048
1000 Independence Avenue, S.W.
Washington, D.C. 20585
(202) 586-5000



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Reference Information

Data Sources

The editorial staff gratefully acknowledge the following sources of data that appear on the individual state pages:

Number of counties	*The World Almanac*
First and peak production years	*AIME Statistical Yearbook, World Oil, Oil & Gas Journal,* & *World Petroleum Report*
Deepest wells drilled	*World Oil*
Cumulative wells drilled	*Oil & Gas Journal, World Petroleum Statistical Yearbook,* International Oil Scouts Association, Petroleum Information, & American Petroleum Institue (API)
Cumulative wellhead value	IPAA
Cumulative production and reserves	API, American Gas Association, and Energy Information Administration (EIA)
Wellhead prices and value	EIA
End-use natural gas prices	EIA
Severance and production taxes	IPAA survey
Wells and footage drilled	API
Seismic crews working	Society of Exploration Geophysicists
Rotary drilling rigs	Baker Hughes, Inc.
Producing wells	*World Oil*
Oil and gas production	EIA
Number of employees	IPAA survey
Petroleum reserve position	EIA
Drilling costs	*Joint Association Survey on Drilling Costs*
Stripper wells	Interstate Oil Compact Commission and National Stripper Well Association
Rank among principal minerals	Based on data from Department of Interior and EIA

Energy Conversions

One barrel of crude oil:
= 42 gallons
= 5,800,000 BTU of energy
= 5,614 cubic feet of natural gas
= 0.22 ton of bituminous coal

One cubic foot of natural gas:
= 7.48 gallons
= 1,032 BTU of energy
= 0.000178 barrel of crude oil
= 0.00004 ton of bituminous coal

One short ton of bituminous coal:
= 2,00 pounds
= 26,200,000 BTU of energy
= 4.52 barrels of crude oil
= 25,314 cubic feet of natural gas

One metric ton of crude oil:
=2,204 pounds
= 7.46 barrels of domestic crude oil
= 6.99 barrels of foreign crude oil

One cubic meter of natural gas:
= 35.314 cubic feet

Abbreviations

bbl. = barrel
b/d = barrels per day
Mcf = thousand cubic feet
MMcf = million cubic feet
Bcf = billion cubic feet
Tcf = trillion cubic feet
BTU = British Thermal Unit
NGL = Natural Gas Liquids
LPG = Liquefied Petroleum Gases
N/A = Data Not Available

UNION DRILLING

A division of Equitable Resources Energy Company

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HAZARD, KY
(606) 439-3801

CENTERVILLE, PA
(814) 694-2647

Drilling Contractors
Producers of Oil & Gas

ALABAMA

Counties with oil and/or gas production

Background Information

Number of counties 67
With oil and/or gas production 18

First year of production:
Crude oil 1944
Natural gas 1904

Year and amount of peak production:
Crude oil — 22,153 thous. bbls. 1980
Natural gas — 129,523 MMcf (est.) 1988

Deepest producing well: (ft.)
Crude oil 18,750
Natural gas 21,650

Year and depth of deepest well drilled: (ft.)
1984 21,818

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	1,024	18%
Gas wells	1,734	30%
Dry holes	3,001	52%
Total	5,759	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $6,471,289

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	348	349	697	1,901
Production	294	183	477	1,046

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.26
Natural gas ($/Mcf) $1.25

Wellhead value of 1989 production: (thous. $)
Crude oil $341,972
Natural gas $160,396
Total $502,368

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $6.23
Commercial consumers $5.06
Industrial consumers $2.94
Electric utilities $2.27
All consumers $4.53

Severance taxes paid in 1989 (thous. $) $49,841

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	8	9	17
Gas	28	340	368
Dry	74	41	115
Service	- -	0	0
Total	110	390	500

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	77.0	88.7	165.7
Gas	87.3	710.7	798.0
Dry	508.8	143.7	652.5
Service	- -	0.0	0.0
Total	673.1	943.1	1,616.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 87
New-field wildcat footage (thous. ft.) 583.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	24th	10th
Production	16th	15th
Reserves (1988)	19th	18th

Seismic crew months worked 4
Average rotary rigs active 11

Number of producing wells: (12/31/89)
Crude oil 931
Flowing 85
Artificial lift 846
Natural gas 1,580
Total 2,511

Average production:	thous. bbls.	thous. b/d
Crude oil	19,813	54
NGL (est.)	4,000	11
Total	23,813	65

Natural gas marketed production (MMcf) 128,317
Average output per producing well:
Crude oil (bbls.) 21,281
Natural gas (Mcf) 81,213

Average number of employees in:
Oil and natural gas extraction 1,961
Refining 451
Transportation 3,372
Wholesale 5,794
Retail 8,677
Total petroleum industry 20,255

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	9	15	24
Production	10	15	25
Net annual change	-1	0	-1
Proved reserves	54	166	220

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	8	60	68
Production	6	96	102
Net annual change	2	-36	-34
Proved reserves	31	824	855

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	19,534	723,469	72.56
Gas	33,981	193,076	74.82
Dry	30,886	249,081	39.72
Total	84,401	258,107	56.23

Number of producing stripper wells 148
Number of stripper well abandonments 6

Stripper well crude oil production:
(bbls.) 300,800
(b/d) 822
Percentage of oil produced by stripper wells 1%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 395
Secondary 55
Total 450

Percentage of total value of principal mineral production:
Crude oil — ranked 3rd 13%
Natural gas — ranked 2nd 16%

State Energy Contact

Alabama State Oil and Gas Board
P.O. Box O
Tuscaloosa, AL 35486
(205) 349-2852

ALASKA

Background Information

Number of counties ..... Not Applicable
With oil and/or gas production ..... Not Applicable

First year of production:
Crude oil 1905
Natural gas 1945

Year and amount of peak production:
Crude oil — 738,143 thous. bbls. 1988
Natural gas — 388,247 MMcf 1989

Deepest producing well: (ft.)
Crude oil 14,952
Natural gas 16,073

Year and depth of deepest well drilled: (ft.)
1979 20,335

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	2,012	75%
Gas wells	130	5%
Dry holes	547	20%
Total	2,689	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $104,562,336

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	14,748	453	15,201	13,800
Production	7,792	52	7,844	4,621

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $12.08
Natural gas ($/Mcf) $1.20

Wellhead value of 1989 production: (thous. $)
Crude oil $8,262,478
Natural gas $465,896
Total $8,728,374

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $3.63
Commercial consumers $2.58
Industrial consumers $1.08
Electric utilities ..... N/A
All consumers $2.06

Severance taxes paid in 1989 (thous. $) $913,921

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	92	92
Gas	0	2	2
Dry	7	0	7
Service	- -	16	16
Total	7	110	117

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	963.1	963.1
Gas	0.0	12.3	12.3
Dry	54.3	0.0	54.3
Service	- -	173.6	173.6
Total	54.3	1,149.0	1,203.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 6
New-field wildcat footage (thous. ft.) 41.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	13th	27th
Production	2nd	7th
Reserves (1988)	2nd	7th

Seismic crew months worked 21
Average rotary rigs active 11

Number of producing wells: (12/31/89)
Crude oil 1,337
Flowing 698
Artificial lift 639
Natural gas 88
Total 1,425

Average production:	thous. bbls.	thous. b/d
Crude oil	683,980	1,874
NGL (est.)	19,000	52
Total	702,980	1,926

Natural gas marketed production (MMcf) 388,247
Average output per producing well:
Crude oil (bbls.) 511,578
Natural gas (Mcf) 4,411,898

Average number of employees in:
Oil and natural gas extraction 9,084
Refining 317
Transportation 1,123
Wholesale 609
Retail 1,061
Total petroleum industry 12,194

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	327	3	330
Production	749	20	769
Net annual change	-422	-17	-439
Proved reserves	6,959	401	7,360

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-24,244	111	-24,133
Production	219	184	403
Net annual change	-24,463	-73	-24,536
Proved reserves	6,269	2,910	9,179

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	311,653	2,533,766	239.39
Gas	11,865	3,955,105	554.97
Dry	13,294	3,323,432	274.19
Total	336,812	2,590,864	245.63

Number of producing stripper wells 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

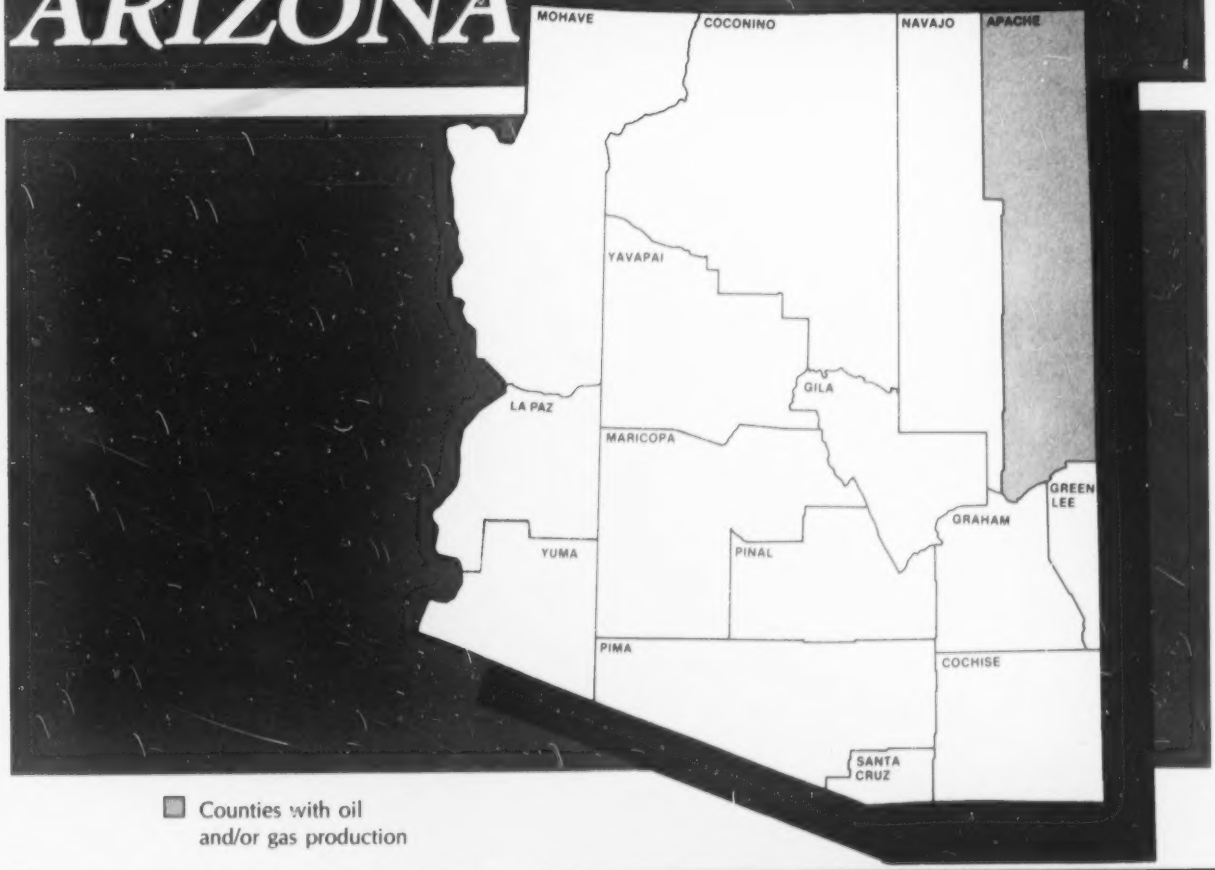
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 91%
Natural gas — ranked 2nd 7%

State Energy Contact

Alaska Oil and Gas Conservation Commitee
3001 Porcupine Drive
Anchorage, AK 99501
(907) 279-1433

ARIZONA



Counties with oil and/or gas production

Background Information

Number of counties 15
With oil and/or gas production 1

First year of production:
Crude oil 1958
Natural gas 1955

Year and amount of peak production:
Crude oil — 3,370 thous. bbls. 1968
Natural gas — 3,161 MMcf 1966

Deepest producing well: (ft.)
Crude oil 6,793
Natural gas ..... N/A

Year and depth of deepest well drilled: (ft.)
1980 18,013

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	49	10%
Gas wells	35	7%
Dry holes	400	83%
Total	484	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $70,776,433

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	0	0	N/A
Production	N/A	0	0	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.30E
Natural gas ($/Mcf) $1.80

Wellhead value of 1989 production: (thous. $)
Crude oil $2,525
Natural gas $95
Total $2,620

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $6.90
Commercial consumers $4.93
Industrial consumers $3.18
Electric utilities $2.33
All consumers $4.07

Severance taxes paid in 1989 ..... Not Applicable

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	0	0
Dry	1	0	1
Service	- -	0	0
Total	1	0	1

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	0.0	0.0
Dry	0.2	0.0	0.2
Service	- -	0.0	0.0
Total	0.2	0.0	0.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 1
New-field wildcat footage (thous. ft.) 0.2

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	29th	28th
Production	29th	30th
Reserves (1988)	N/A	N/A

Seismic crew months worked 5
Average rotary rigs active 0

Number of producing wells: (12/31/89)
Crude oil 25
Flowing 0
Artificial lift 25
Natural gas ..... N/A
Total 25

Average production:	thous. bbls.	thous. b/d
Crude oil	138	- -
NGL (est.)	N/A	- -
Total	138	- -

Natural gas marketed production (MMcf) 53E
Average output per producing well:
Crude oil (bbls.) 5,520
Natural gas (Mcf) ..... N/A

Average number of employees in:
Oil and natural gas extraction 114
Refining 0
Transportation 1,916
Wholesale 1,403
Retail 9,217
Total petroleum industry 12,650

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	0	0
Production	N/A	0	0
Net annual change	N/A	0	0
Proved reserves	N/A	0	0

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells 13
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 28,851
(b/d) 79
Percentage of oil produced by stripper wells 26%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 114
Secondary 0
Total 114

Percentage of total value of principal mineral production:
Crude oil — ranked 10th ..... Less than 1%
Natural gas --- ranked 13th ..... Less than 1%

State Energy Contact

Arizona Oil and Gas Conservation Commission
3110 North 19th Avenue
Suite 190
Phoenix, AZ 85015
(602) 255-5161

ARKANSAS

Counties with oil and/or gas production

Background Information

Number of counties 75
With oil and/or gas production 22

First year of production:
Crude oil 1921
Natural gas 1889

Year and amount of peak production:
Crude oil — 77,398 thous. bbls. 1925
Natural gas — 181,351 MMcf 1970

Deepest producing well: (ft.)
Crude oil 12,128
Natural gas 11,195

Year and depth of deepest well drilled: (ft.)
1979 17,349

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	17,892	51%
Gas wells	3,906	11%
Dry holes	13,130	38%
Total	34,928	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $7,989,842

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,701	96	1,797	6,881
Production	1,624	83	1,707	4,721

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.34
Natural gas ($/Mcf) $1.55

Wellhead value of 1989 production: (thous. $)
Crude oil $195,266
Natural gas $260,865
Total $456,131

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.87
Commercial consumers $4.38
Industrial consumers $3.09
Electric utilities $1.69
All consumers $3.63

Severance taxes paid in 1989 (thous. $) $8,478

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	3	29	32
Gas	10	117	127
Dry	45	107	152
Service	- -	1	1
Total	58	254	312

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	14.0	130.5	144.5
Gas	44.2	520.3	564.4
Dry	245.2	452.6	697.9
Service	- -	8.0	8.0
Total	303.4	1,111.4	1,414.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 46
New-field wildcat footage (thous. ft.) 231.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	19th	15th
Production	17th	12th
Reserves (1988)	16th	12th

Seismic crew months worked 16
Average rotary rigs active 9

Number of producing wells: (12/31/89)
Crude oil 4,340
Flowing 150
Artificial lift 4,190
Natural gas 2,830
Total 7,170

Average production:	thous. bbls.	thous. b/d
Crude oil	11,261	31
NGL (est.)	1,000	3
Total	12,261	34

Natural gas marketed production (MMcf) 168,300
Average output per producing well:
Crude oil (bbls.) 2,595
Natural gas (Mcf) 59,470

Average number of employees in:
Oil and natural gas extraction 2,540
Refining 454
Transportation 2,476
Wholesale 2,828
Retail 5,573
Total petroleum industry 13,871

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	7	-2	5
Production	12	1	13
Net annual change	-5	-3	-8
Proved reserves	77	13	90

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	18	124	142
Production	6	154	160
Net annual change	12	-30	-18
Proved reserves	157	1,843	2,000

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	8,758	199,052	38.83
Gas	54,708	289,459	70.26
Dry	23,590	122,227	29.28
Total	87,056	204,356	48.10

Number of producing stripper wells 7,597
Number of stripper well abandonments 138

Stripper well crude oil production:
(bbls.) 6,687,810
(b/d) 18,273
Percentage of oil produced by stripper wells 50%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 117,363
Secondary 40,904
Total 158,267

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 23%
Natural gas — ranked 1st 39%

State Energy Contact

Arkansas Oil and Gas Commission
314 East Oak Street
El Dorado, AR 71730
(501) 862-4965

CALIFORNIA

☐ Counties with oil and/or gas production

Background Information

Number of counties 58
With oil and/or gas production 29

First year of production:
Crude oil 1861
Natural gas 1889

Year and amount of peak production:
Crude oil — 423,877 thous. bbls. 1985
Natural gas — 714,893 MMcf 1968

Deepest producing well: (ft.)
Crude oil 18,876
Natural gas 18,008

Year and depth of deepest well drilled: (ft.)
1987 24,426

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	112,667	79%
Gas wells	3,601	2%
Dry holes	27,163	19%
Total	143,431	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $123,889,967

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	27,559	1,378	28,937	42,185
Production	21,986	1,234	23,220	32,148

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $14.05
Natural gas ($/Mcf) $1.82

Wellhead value of 1989 production: (thous. $)
Crude oil $5,117,698
Natural gas $676,774
Total $5,794,472

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.58
Commercial consumers $4.87
Industrial consumers $3.62
Electric utilities $3.04
All consumers $4.27

Severance taxes paid in 1989 (thous. $). $379,385
(Property taxes applied to minerals)

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	5	1,353	1,358
Gas	12	50	62
Dry	103	46	149
Service	- -	69	69
Total	120	1,518	1,638

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	25.0	2,811.9	2,836.9
Gas	68.4	299.8	368.2
Dry	669.0	267.9	936.9
Service	- -	143.9	143.9
Total	762.4	3,523.5	4,285.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 46
New-field wildcat footage (thous. ft.) 305.1

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	2nd	17th
Production	4th	8th
Reserves (1988)	3rd	9th

Seismic crew months worked 73
Average rotary rigs active 49

Number of producing wells: (12/31/89)
Crude oil 43,745
Flowing 1,534
Artificial lift 42,211
Natural gas 1,181
Total 44,926

Average production:	thous. bbls.	thous. b/d
Crude oil	364,249	998
NGL (est.)	10,000	27
Total	374,249	1,025

Natural gas marketed production (MMcf) 371,854
Average output per producing well:
Crude oil (bbls.) 8,327
Natural gas (Mcf) 314,864

Average number of employees in:
Oil and natural gas extraction 31,367
Refining 26,573
Transportation 12,471
Wholesale 14,289
Retail 62,670
Total petroleum industry 147,370

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	539	8	547
Production	382	11	393
Net annual change	157	-3	154
Proved reserves	5,903	144	6,047

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	169	93	262
Production	223	162	385
Net annual change	-54	-69	-123
Proved reserves	3,858	1,378	5,236

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	301,375	206,280	104.12
Gas	38,189	424,321	67.96
Dry	80,954	481,872	71.26
Total	420,519	244,630	91.57

Number of producing stripper wells 26,527
Number of stripper well abandonments 1,041

Stripper well crude oil production:
(bbls.) 38,075,587
(b/d) 104,032
Percentage of oil produced by stripper wells 10%

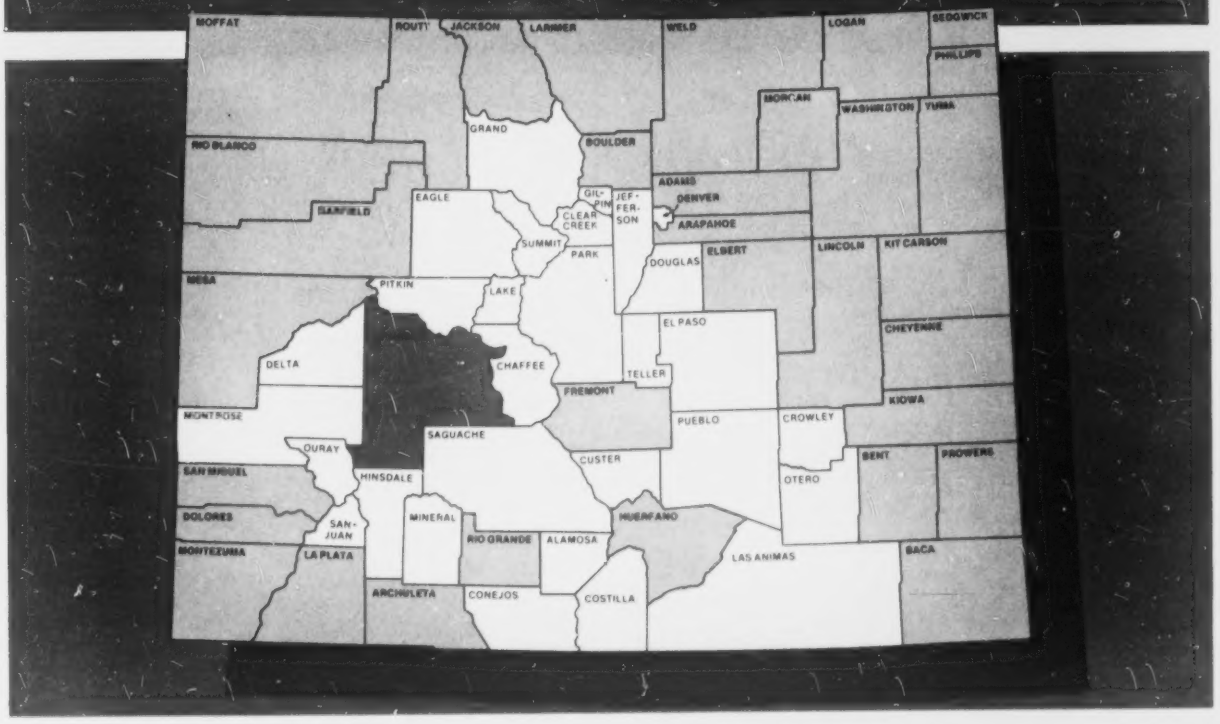
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 149,700
Secondary 61,160
Total 210,860

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 54%
Natural gas — ranked 2nd 11%

State Energy Contact

California Department of Conservation
Division of Oil and Gas
1416 Ninth Street, Room 1310
Sacramento, CA 95814
(916) 445-9686

COLORADO



☐ Counties with oil and/or gas production

Background Information

Number of counties 63
With oil and/or gas production 33

First year of production:
Crude oil 1887
Natural gas 1893

Year and amount of peak production:
Crude oil — 58,516 thous. bbls. 1956
Natural gas — 209,892 MMcf 1982

Deepest producing well: (ft.)
Crude oil 12,704
Natural gas 17,632

Year and depth of deepest well drilled: (ft.)
1986 22,092

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	11,262	28%
Gas wells	8,357	20%
Dry holes	21,270	52%
Total	40,889	100%

Cumulative crude oil wellhead value as of 12/31/89 (thous. $) $12,558,716

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,778	380	2,158	8,748
Production	1,521	199	1,720	4,999

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.84
Natural gas ($/Mcf) $1.52

Wellhead value of 1989 production: (thous. $)
Crude oil $577,540
Natural gas $309,847
Total $887,387

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.59
Commercial consumers $4.00
Industrial consumers $3.46
Electric utilities $2.28
All consumers $4.19

Severance taxes paid in 1989 (thous. $) $15,218

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	31	74	105
Gas	29	452	481
Dry	251	65	316
Service	- -	4	4
Total	311	595	906

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	186.2	422.0	608.2
Gas	169.0	2,400.5	2,569.4
Dry	1,379.5	322.3	1,701.8
Service	- -	20.4	20.4
Total	1,734.7	3,165.2	4,899.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 213
New-field wildcat footage (thous. ft.) 1,177.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	12th	7th
Production	10th	9th
Reserves (1988)	10th	8th

Seismic crew months worked 88
Average rotary rigs active 27

Number of producing wells: (12/31/89)
- Crude oil 6,362
  - Flowing 541
  - Artificial lift 5,821
- Natural gas 4,481
- Total 10,843

Average production:	thous. bbls.	thous. b/d
Crude oil	30,655	84
NGL (est.)	9,000	25
Total	39,655	109

Natural gas marketed production (MMcf) 203,847
Average output per producing well:
- Crude oil (bbls.) 4,818
- Natural gas (Mcf) 45,491

Average number of employees in:
- Oil and natural gas extraction 12,325
- Refining 584
- Transportation 2,068
- Wholesale 2,345
- Retail 9,176
- Total petroleum industry 26,498

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	17	25	42
Production	32	10	42
Net annual change	-15	15	0
Proved reserves	257	181	438

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-5	823	818
Production	37	163	200
Net annual change	-42	660	618
Proved reserves	177	3,572	3,749

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	49,791	219,345	37.12
Gas	122,673	242,436	45.35
Dry	51,016	151,832	26.90
Total	223,480	209,055	37.61

Number of producing stripper wells 5,069
Number of stripper well abandonments 218

Stripper well crude oil production:
- (bbls.) 6,609,588
- (b/d) 18,059

Percentage of oil produced by stripper wells 20%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
- Primary 59,944
- Secondary 4,328
- Total 64,272

Percentage of total value of principal mineral production:
- Crude oil — ranked 1st 32%
- Natural gas — ranked 3rd 20%

State Energy Contact

Colorado Oil & Gas Conservation Commission
1580 Logan Street
Suite 380
Denver, CO 80203
(303) 866-3531

FLORIDA

Counties with oil and/or gas production

Background Information

Number of counties 67
With oil and/or gas production 5

First year of production:
Crude oil 1943
Natural gas 1943

Year and amount of peak production:
Crude oil — 47,536 thous. bbls. 1978
Natural gas — 51,595 MMcf 1978

Deepest producing well: (ft.)
Crude oil 16,656
Natural gas 17,452

Year and depth of deepest well drilled: (ft.)
1975 18,670

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	284	29%
Gas wells	3	0%
Dry holes	709	71%
Total	996	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $8,328,141

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	650	81	731	568
Production	591	65	656	499

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $11.75E
Natural gas ($/Mcf) $1.10

Wellhead value of 1989 production: (thous. $)
Crude oil $85,646
Natural gas $8,782
Total $94,428

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $8.19
Commercial consumers $4.78
Industrial consumers $3.09
Electric utilities $2.49
All consumers $3.07

Severance taxes paid in 1989 (thous. $) $12,881

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	0	0
Dry	9	2	11
Service	- -	0	0
Total	9	2	11

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	0.0	0.0
Dry	130.8	30.1	160.9
Service	- -	0.0	0.0
Total	130.8	30.1	160.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 9
New-field wildcat footage (thous. ft.) 130.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	29th	N/A
Production	19th	23rd
Reserves (1988)	18th	23rd

Seismic crew months worked 3
Average rotary rigs active 2

Number of producing wells: (12/31/89)
Crude oil 101
Flowing 59
Artificial lift 42
Natural gas ..... N/A
Total 101

Average production:	thous. bbls.	thous. b/d
Crude oil	7,289	20
NGL (est.)	1,000	3
Total	8,289	23

Natural gas marketed production (MMcf) 7,984
Average output per producing well:
Crude oil (bbls.) 72,168
Natural gas (Mcf) ..... N/A

Average number of employees in:
Oil and natural gas extraction 486
Refining 277
Transportation 2,315
Wholesale 7,251
Retail 30,483
Total petroleum industry 40,812

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	6	8	14
Production	8	1	9
Net annual change	-2	7	5
Proved reserves	59	16	75

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	13	0	13
Production	6	0	6
Net annual change	7	0	7
Proved reserves	69	0	69

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	3,932	1,966,041	137.44
Gas	- -	- -	- -
Dry	11,064	1,383,050	107.52
Total	14,996	1,499,648	114.03

Number of producing stripper wells 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil — ranked 4th 8%
Natural gas — ranked 6th ..... Less than 1 %

State Energy Contact

Florida Bureau of Geology
Division of Resource Management
903 West Tennessee Street
Tallahasee, FL 32304
(904) 488-4191

ILLINOIS

☐ Counties with oil and/or gas production

Background Information

Number of counties 102
With oil and/or gas production 47

First year of production:
Crude oil 1889
Natural gas 1882

Year and amount of peak production:
Crude oil —147,647 thous. bbls. 1940
Natural gas — 18,137 MMcf 1944

Deepest producing well: (ft.)
Crude oil 5,405
Natural gas 4,832

Year and depth of deepest well drilled: (ft.)
1976 14,942

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	80,268	60%
Gas wells	1,706	1%
Dry holes	51,090	39%
Total	133,064	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $15,550,794

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	3,435	N/A	3,435	N/A
Production	3,292	N/A	3,292	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.36
Natural gas ($/Mcf) $2.25

Wellhead value of 1989 production: (thous. $)
Crude oil $374,122
Natural gas $2,939
Total $377,061

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.86
Commercial consumers $4.57
Industrial consumers $3.77
Electric utilities $3.30
All consumers $4.66

Severance taxes paid in 1989 ..... Not Applicable

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	14	316	330
Gas	12	32	44
Dry	237	178	415
Service	- -	8	8
Total	263	534	797

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	33.6	700.6	734.1
Gas	8.0	17.7	25.7
Dry	441.9	339.1	781.0
Service	- -	58.5	58.5
Total	483.5	1,115.9	1,599.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 93
New-field wildcat footage (thous. ft.) 140.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	7th	19th
Production	15th	27th
Reserves (1988)	14th	23rd

Seismic crew months worked 2
Average rotary rigs active 5

Number of producing wells: (12/31/89)
Crude oil 32,441
Flowing 0
Artificial lift 32,441
Natural gas 296
Total 32,737

Average production:	thous. bbls.	thous. b/d
Crude oil	20,377	56
NGL (est.)	N/A	N/A
Total	20,377	56

Natural gas marketed production (MMcf) 1,306E
Average output per producing well:
Crude oil (bbls.) 628
Natural gas (Mcf) 4,412

Average number of employees in:
Oil and natural gas extraction 3,136
Refining 8,753
Transportation 8,657
Wholesale 10,782
Retail 27,696
Total petroleum industry 59,024

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	12	N/A	12
Production	22	N/A	22
Net annual change	-10	N/A	-10
Proved reserves	143	N/A	143

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	38,114	73,016	35.06
Gas	755	22,195	40.59
Dry	13,382	32,169	15.96
Total	52,251	53,756	26.88

Number of producing stripper wells 32,358
Number of stripper well abandonments 183

Stripper well crude oil production:
(bbls.) 20,025,675
(b/d) 54,715
Percentage of oil produced by stripper wells 89%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 45,150
Secondary 48,040
Total 93,190

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 18%
Natural gas — ranked 7th ..... Less than 1%

State Energy Contact

Illinois Department of Mines and Minerals
704 William G. Stratton Building
Springfield, IL 62706
(217) 782-7756

INDIANA

☐ Counties with oil and/or gas production

Background Information

Number of counties 92
With oil and/or gas production 40

First year of production:
Crude oil 1889
Natural gas 1885

Year and amount of peak production:
Crude oil — 12,823 thous. bbls. 1953
Natural gas — 2,241 MMcf 1936

Deepest producing well: (ft.)
Crude oil 4,508
Natural gas 3,335

Year and depth of deepest well drilled: (ft.)
1971 7,980

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	38,588	58%
Gas wells	2,226	4%
Dry holes	25,259	38%
Total	66,073	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $2,608,114

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	531	N/A	531	N/A
Production	509	N/A	509	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.37
Natural gas ($/Mcf) $1.70

Wellhead value of 1989 production: (thous. $)
Crude oil $60,805
Natural gas $770
Total $61,575

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.51
Commercial consumers $4.81
Industrial consumers $3.92
Electric utilities $2.71
All consumers $5.02

Severance taxes paid in 1989 (thous. $) $804

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	9	57	66
Gas	2	8	10
Dry	61	47	108
Service	- -	5	5
Total	72	117	189

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	12.4	69.8	82.2
Gas	1.9	9.1	11.0
Dry	92.3	61.2	153.5
Service	- -	6.1	6.1
Total	106.6	146.2	252.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 23
New-field wildcat footage (thous. ft.) 31.2

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	16th	23rd
Production	22nd	29th
Reserves (1988)	24th	23rd

Seismic crew months worked 0
Average rotary rigs active 0

Number of producing wells: (12/31/89)
Crude oil 7,543
Flowing 0
Artificial lift 7,543
Natural gas 1,295
Total 8,838

Average production:	thous. bbls.	thous. b/d
Crude oil	3,310	9
NGL (est.)	N/A	N/A
Total	3,310	9

Natural gas marketed production (MMcf) 453E
Average output per producing well:
Crude oil (bbls.) 439
Natural gas (Mcf) 350

Average number of employees in:
Oil and natural gas extraction 463
Refining 2,586
Transportation 3,239
Wholesale 3,470
Retail 19,276
Total petroleum industry 29,034

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	3	N/A	3
Production	4	N/A	4
Net annual change	-1	N/A	-1
Proved reserves	22	N/A	22

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	2,930	36,175	25.48
Gas	570	27,160	20.59
Dry	2,721	24,077	15.73
Total	6,221	28,936	19.71

Number of producing stripper wells 6,171
Number of stripper well abandonments 446

Stripper well crude oil production:
(bbls.) 3,575,971
(b/d) 9,770
Percentage of oil produced by stripper wells 98%

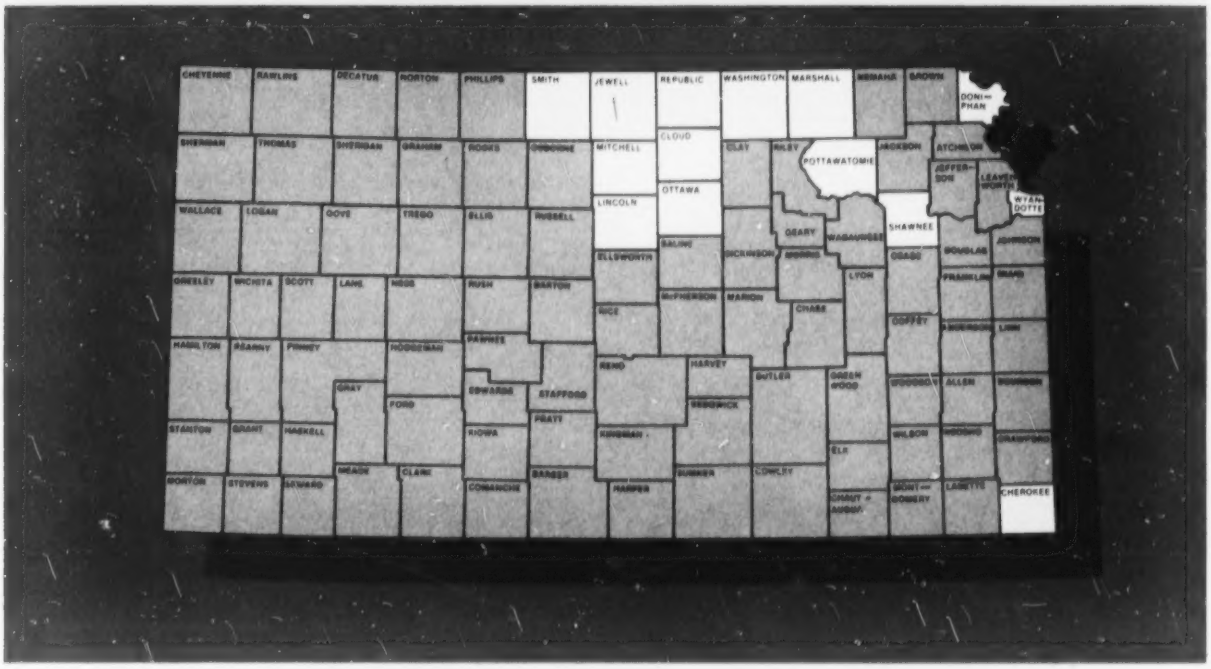
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 20,175
Secondary 16,505
Total 36,680

Percentage of total value of principal mineral production:
Crude oil — ranked 5th 4%
Natural gas — ranked 8th ..... Less than 1%

State Energy Contact

Indiana Department of Natural Resources
Division of Oil and Gas
911 State Office Building, Room 911B
Indianapolis, IN 46204
(317) 232-4055

KANSAS



☐ Counties with oil and/or gas production

Background Information

Number of counties 105
With oil and/or gas production 91

First year of production:
Crude oil 1889
Natural gas 1882

Year and amount of peak production:
Crude oil — 124,204 thous. bbls. 1956
Natural gas — 899,955 MMcf 1970

Deepest producing well: (ft.)
Crude oil 7,400
Natural gas 6,774

Year and depth of deepest well drilled: (ft.)
1984 11,300

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	122,739	51%
Gas wells	24,040	10%
Dry holes	95,071	39%
Total	241,850	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $31,855,401

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	5,771	1,138	6,909	41,021
Production	5,444	793	6,237	30,491

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.18
Natural gas ($/Mcf) $1.43

Wellhead value of 1989 production: (thous. $)
Crude oil, ... $1,008,699
Natural gas $839,552
Total $1,848,251

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.16
Commercial consumers $3.21
Industrial consumers $3.25
Electric utilities $1.93
All consumers $3.49

Severance taxes paid in 1989 (thous. $) $171,090

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	164	685	849
Gas	64	471	535
Dry	642	392	1,034
Service	- -	3	3
Total	870	1,551	2,421

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	712.5	1,564.1	2,276.6
Gas	288.7	1,367.3	1,655.9
Dry	2,584.1	1,281.2	3,865.4
Service	- -	10.2	10.2
Total	3,585.3	4,222.8	7,808.1

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 385
New-field wildcat footage (thous. ft.) 1,606.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	4th	6th
Production	8th	6th
Reserves (1988)	8th	6th

Seismic crew months worked 312
Average rotary rigs active 43

Number of producing wells: (12/31/89)
Crude oil 44,969
Flowing 58
Artificial lift 44,911
Natural gas 13,935
Total 58,904

Average production:	thous. bbls.	thous. b/d
Crude oil	55,484	152
NGL (est.)	16,000	44
Total	71,484	196

Natural gas marketed production (MMcf) 587,099
Average output per producing well:
Crude oil (bbls.) 1,234
Natural gas (Mcf) 42,131

Average number of employees in:
Oil and natural gas extraction 8,141
Refining 2,279
Transportation 4,788
Wholesale 2,562
Retail 9,339
Total petroleum industry 27,109

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	27	-99	-72
Production	57	18	75
Net annual change	-30	-117	-147
Proved reserves	327	345	672

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	6	4	10
Production	18	551	569
Net annual change	-12	-547	-559
Proved reserves	103	10,427	10,530

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	82,488	82,078	27.94
Gas	81,675	133,893	45.59
Dry	70,353	57,572	16.21
Total	234,516	82,663	25.82

Number of producing stripper wells 46,720
Number of stripper well abandonments 1,883

Stripper well crude oil production:
(bbls.) 57,051,250
(b/d) 155,878
Percentage of oil produced by stripper wells 97%

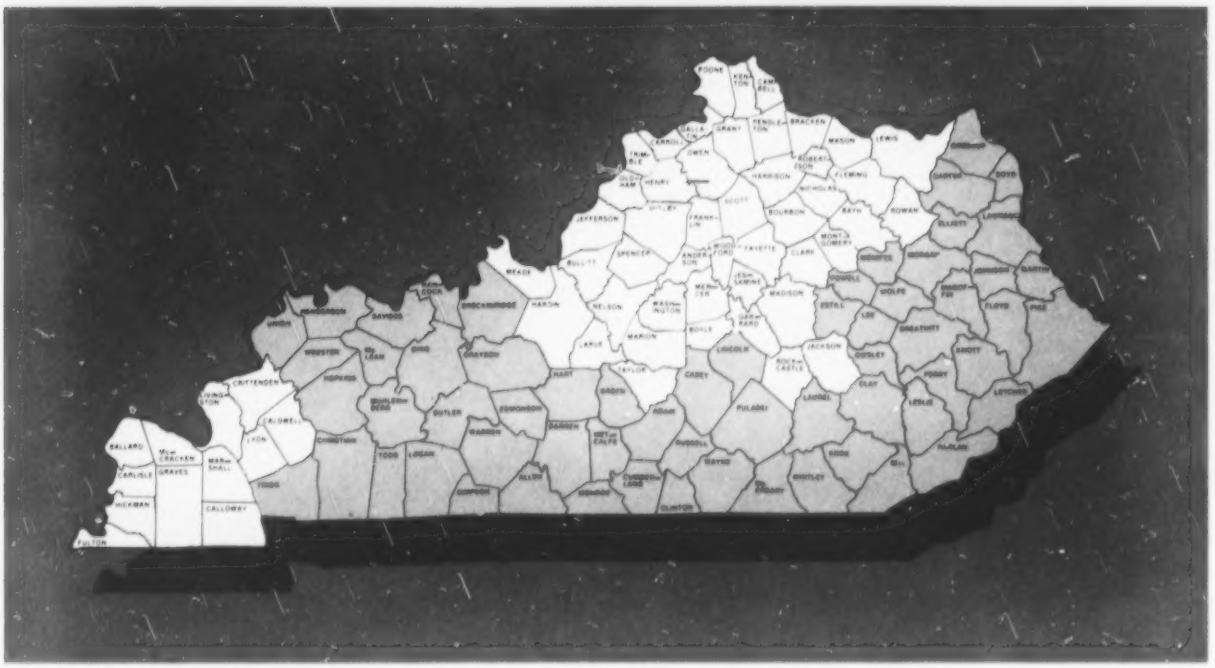
Stripper oil reserves as of 12/31/88 (thous. bbls.)
Primary 143,320
Secondary 117,260
Total 260,580

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 44%
Natural gas — ranked 2nd 40%

State Energy Contact

Kansas Corporation Commission
202 West 1st Street
Colorado Derby Building, Suite 200
Wichita, KS 67202
(316) 263-3238

KENTUCKY



☐ Counties with oil and/or gas production

Background Information

Number of counties 120
With oil and/or gas production 62

First year of production:
Crude oil 1860
Natural gas 1888

Year and amount of peak production:
Crude oil — 27,272 thous. bbls. 1959
Natural gas — 96,459 MMcf 1947

Deepest producing well: (ft.)
Crude oil 7,598
Natural gas 10,934

Year and depth of deepest well drilled: (ft.)
1977 15,200

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	53,562	50%
Gas wells	12,509	12%
Dry holes	40,601	38%
Total	106,672	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $16,225,219

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	732	145	877	4,754
Production	698	121	819	3,864

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.36
Natural gas ($/Mcf) $2.60

Wellhead value of 1989 production: (thous. $)
Crude oil $99,401
Natural gas $197,106
Total $296,507

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.67
Commercial consumers $4.33
Industrial consumers $3.96
Electric utilities $2.72
All consumers $4 48

Severance taxes paid in 1989 (thous. $) $10,675

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	10	185	195
Gas	8	341	349
Dry	127	170	297
Service	- -	2	2
Total	145	698	843

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	18.9	273.6	292.5
Gas	22.8	965.1	987.8
Dry	231.5	202.7	434.2
Service	- -	1.2	1.2
Total	273.2	1,442.6	1,715.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 83
New-field wildcat footage (thous. ft.) 166.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	9th	12th
Production	21st	18th
Reserves (1988)	21st	17th

Seismic crew months worked 1
Average rotary rigs active 5

Number of producing wells: (12/31/89)
Crude oil 22,859
Flowing 0
Artificial lift 22,859
Natural gas 11,250
Total 34,109

Average production:	thous. bbls.	thous. b/d
Crude oil	5,414	15
NGL (est.)	2,000	5
Total	7,414	20

Natural gas marketed production (MMcf) 75,810E
Average output per producing well:
Crude oil (bbls.) 237
Natural gas (Mcf) 6,739

Average number of employees in:
Oil and natural gas extraction 1,810
Refining 4,003
Transportation 3,069
Wholesale 3,192
Retail 11,464
Total petroleum industry 23,538

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	14	3	17
Production	5	2	7
Net annual change	9	1	10
Proved reserves	34	24	58

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	2	77	79
Production	2	60	62
Net annual change	0	17	17
Proved reserves	19	938	957

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	16,015	59,316	36.23
Gas	32,076	95,181	41.20
Dry	6,741	24,872	17.31
Total	54,832	62,451	34.06

Number of producing stripper wells 18,306
Number of stripper well abandonments 487

Stripper well crude oil production:
(bbls.) 4,564,340
(b/d) 12,471
Percentage of oil produced by stripper wells 84%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 10,478
Secondary 15,338
Total 25,816

Percentage of total value of principal mineral production:
Crude oil — ranked 5th 2%
Natural gas — ranked 3rd 4%

State Energy Contact

Kentucky Department of Mines and Minerals
Oil and Gas Division
P.O. Box 690
Lexington, KY 40586
(606) 257-3812

LOUISIANA

☐ Parishes with oil and/or gas production

Background Information

Number of parishes 64
With oil and/or gas production 64

First year of production:
Crude oil 1902
Natural gas 1905

Year and amount of peak production:
Crude oil — 935,243 thous. bbls. 1971
Natural gas — 8,242,423 MMcf 1973

Deepest producing well: (ft.)
Crude oil 22,856
Natural gas 21,862

Year and depth of deepest well drilled: (ft.)
1981 25,703

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	85,132	45%
Gas wells	32,390	17%
Dry holes	70,861	38%
Total	188,383	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $188,707,581

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	26,251	3,954	30,205	239,161
Production	23,924	2,925	26,849	202,653

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.34
Natural gas ($/Mcf) $1.82

Wellhead value of 1989 production: (thous. $)
Crude oil $7,415,394
Natural gas $9,338,793
Total $16,754,187

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.93
Commercial consumers $5.26
Industrial consumers $1.97
Electric utilities $1.77
All consumers $2.30

Severance taxes paid in 1989 (thous. $) $397,375

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	11	299	310
Gas	19	427	446
Dry	293	551	844
Service	- -	6	6
Total	323	1,283	1,606

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	100.3	1,838.7	1,939.0
Gas	189.5	3,247.1	3,436.7
Dry	2,548.3	4,513.2	7,061.5
Service	- -	53.8	53.8
Total	2,838.2	9,652.8	12,491.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 205
New-field wildcat footage (thous. ft.) 1,702.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	8th	8th
Production	3rd	2nd
Reserves (1988)	5th	4th

Seismic crew months worked 68
Average rotary rigs active 140

Number of producing wells: (12/31/89)
- Crude oil 22,872
  - Flowing 2,008
  - Artificial lift 20,864
- Natural gas 13,873
- Total 36,745

Average production:	thous. bbls.	thous. b/d
Crude oil	404,329	1,108
NGL (est.)	78,000	214
Total	482,329	1,322

Natural gas marketed production (MMcf) 5,131,205
Average output per producing well:
- Crude oil (bbls.) 17,678
- Natural gas (Mcf) 369,870

Average number of employees in:
- Oil and natural gas extraction 52,700
- Refining 11,236
- Transportation 7,161
- Wholesale 6,797
- Retail 7,332
- Total petroleum industry 85,226

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	383	117	500
Production	377	145	522
Net annual change	6	-28	-22
Proved reserves	2,327	1,029	3,356

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	584	4,373	4,957
Production	729	4,277	5,006
Net annual change	-145	96	-49
Proved reserves	6,544	29,964	36,508

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	502,951	788,324	128.15
Gas	803,044	1,571,514	184.08
Dry	1,102,487	1,133,080	130.34
Total	2,408,481	1,135,005	143.83

Number of producing stripper wells 16,500
Number of stripper well abandonments 1,116

Stripper well crude oil production:
- (bbls.) 8,242,330
- (b/d) 22,520

Percentage of oil produced by stripper wells 2%

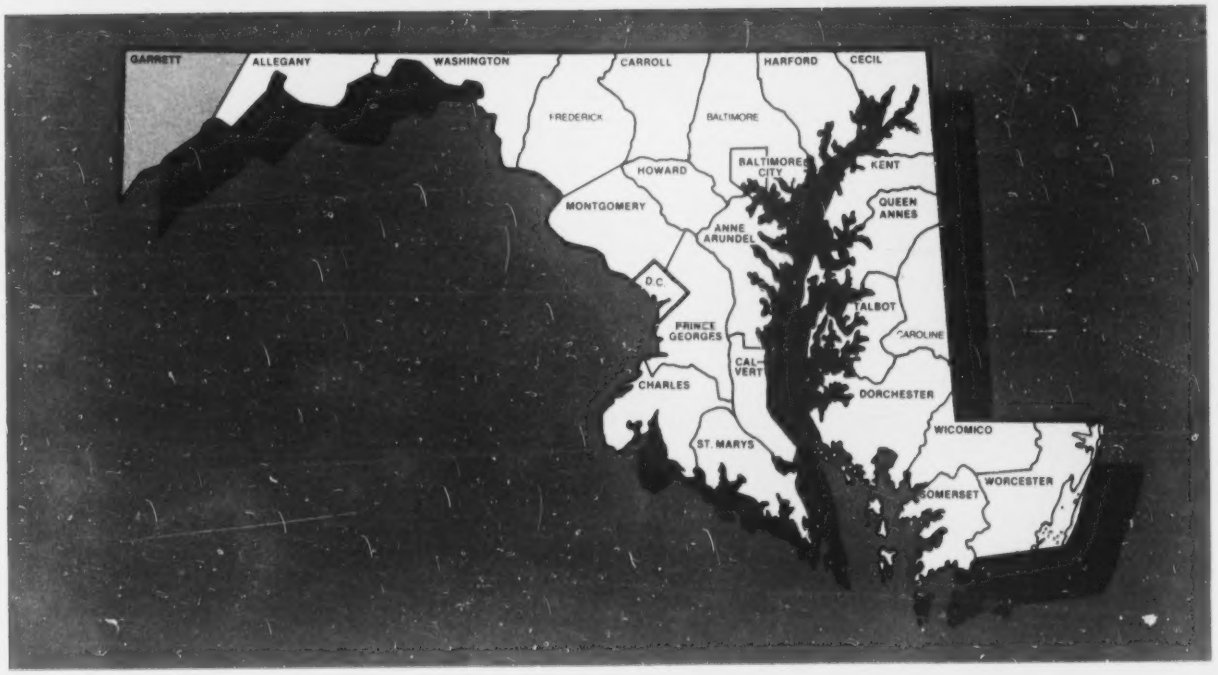
Stripper oil reserves as of 12/31/88: (thous. bbls.)
- Primary 60,751
- Secondary 58,370
- Total 119,121

Percentage of total value of principal mineral production:
- Crude oil — ranked 2nd 40%
- Natural gas — ranked 1st 57%

State Energy Contact

Louisiana Department of Natural Resources
P.O. Box 44396
Capitol Station
Baton Rouge, LA 70804
(504) 342-4500

MARYLAND



☐ Counties with oil and/or gas production

Background Information

Number of counties 23
With oil and/or gas production 1

First year of production:
Crude oil ..... Not Applicable
Natural gas 1950

Year and amount of peak production:
Crude oil ..... Not Applicable
Natural gas — 4,543 MMcf 1959

Deepest producing well: (ft.)
Crude oil ..... Not Applicable
Natural gas 8,658

Year and depth of deepest well drilled: (ft.)
1973 11,617

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	0	0%
Gas wells	72	59%
Dry holes	51	41%
Total	123	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) ..... Not Applicable

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	0	0	0	N/A
Production	0	0	0	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) ..... Not Applicable
Natural gas ($/Mcf) $0.84

Wellhead value of 1989 production: (thous. $)
Crude oil ..... Not Applicable
Natural gas $16
Total $16

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $6.34
Commercial consumers $5.25
Industrial consumers $4.83
Electric utilities $2.72
All consumers $5.42

Severance taxes paid in 1989 (thous. $) $2

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	0	0
Dry	0	0	0
Service	- -	0	0
Total	0	0	0

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	0.0	0.0
Dry	0.0	0.0	0.0
Service	- -	0.0	0.0
Total	0.0	0.0	0.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 0
New-field wildcat footage (thous. ft.) 0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	N/A
Production	- -	31st
Reserves (1988)	- -	N/A

Seismic crew months worked 0
Average rotary rigs active 0

Number of producing wells: (12/31/89)
Crude oil 0
Flowing 0
Artificial lift 0
Natural gas ..... N/A
Total 0

Average production:	thous. bbls.	thous. b/d
Crude oil	0	- -
NGL (est.)	0	- -
Total	0	- -

Natural gas marketed production (MMcf) 19E
Average output per producing well:
Crude oil (bbls.) 0
Natural gas (Mcf) 0

Average number of employees in:
Oil and natural gas extraction 50
Refining 317
Transportation 1,174
Wholesale 2,935
Retail 13,243
Total petroleum industry 17,719

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	0	0	0
Production	0	0	0
Net annual change	0	0	0
Proved reserves	0	0	0

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil ..... Not Applicable
Natural gas — ranked 8th ..... Less than 1%

State Energy Contact

Maryland Geological Survey
2300 Saint Paul Street
Baltimore, MD 21218
(301) 554-5500

MICHIGAN

☐ Counties with oil and/or gas production

Background Information

Number of counties 83
With oil and/or gas production 61

First year of production:
Crude oil 1900
Natural gas 1909

Year and amount of peak production:
Crude oil — 34,862 thous. bbls. 1979
Natural gas — 159,731 MMcf 1979

Deepest producing well: (ft.)
Crude oil 10,515
Natural gas 11,635

Year and depth of deepest well drilled: (ft.)
1975 17,466

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	14,334	38%
Gas wells	3,833	10%
Dry holes	19,827	52%
Total	37,994	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $10,859,324

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,183	242	1,425	2,894
Production	1,051	143	1,194	1,460

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.08
Natural gas ($/Mcf) $3.20

Wellhead value of 1989 production: (thous. $)
Crude oil $389,913
Natural gas $472,633
Total $862,546

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.15
Commercial consumers $4.85
Industrial consumers $4.51
Electric utilities $0.19
All consumers $4.86

Severance taxes paid in 1989 (thous. $) $49,422

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	10	43	53
Gas	38	562	600
Dry	129	36	165
Service	- -	2	2
Total	177	643	820

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	37.1	159.6	196.6
Gas	208.1	1,012.4	1,220.5
Dry	646.6	182.4	829.0
Service	- -	6.1	6.1
Total	891.8	1,360.5	2,252.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 144
New-field wildcat footage (thous. ft.) 636.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	17th	5th
Production	13th	14th
Reserves (1988)	15th	14th

Seismic crew months worked 85
Average rotary rigs active 17

Number of producing wells: (12/31/89)
Crude oil 5,557
Flowing 1,338
Artificial lift 4,219
Natural gas 1,265
Total 6,822

Average production:	thous. bbls.	thous. b/d
Crude oil	21,566	59
NGL (est.)	8,000	22
Total	29,566	81

Natural gas marketed production (MMcf) 156,501
Average output per producing well:
Crude oil (bbls.) 3,881
Natural gas (Mcf) 123,716

Average number of employees in:
Oil and natural gas extraction 4,090
Refining 1,523
Transportation 6,873
Wholesale 6,502
Retail 25,955
Total petroleum industry 44,943

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	0	-3	-3
Production	19	9	28
Net annual change	-19	-12	-31
Proved reserves	132	99	231

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-17	17	0
Production	61	76	137
Net annual change	-78	-59	-137
Proved reserves	491	943	1,434

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	21,731	297,689	64.66
Gas	120,686	378,326	138.29
Dry	77,145	322,784	61.12
Total	219,563	347,960	88.86

Number of producing stripper wells 3,040
Number of stripper well abandonments 157

Stripper well crude oil production:
(bbls.) 3,891,430
(b/d) 10,632
Percentage of oil produced by stripper wells 17%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 22,180
Secondary 25,950
Total 48,130

Percentage of total value of principal mineral production:
Crude oil — ranked 3rd 14%
Natural gas — ranked 2nd 19%

State Energy Contact

Michigan Geological Survey
Department of Natural Resources
P.O. Box 30028
Lansing, MI 48909
(517) 334-6907

MISSISSIPPI

Counties with oil and/or gas production

Background Information

Number of counties 82
With oil and/or gas production 45

First year of production:
Crude oil 1889
Natural gas 1923

Year and amount of peak production:
Crude oil — 65,119 thous. bbls. 1970
Natural gas — 181,238 MMcf 1981

Deepest producing well: (ft.)
Crude oil 21,533
Natural gas 21,727

Year and depth of deepest well drilled: (ft.)
1986 25,500

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	7,735	32%
Gas wells	1,432	6%
Dry holes	14,910	62%
Total	24,077	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $13,077,686

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	2,389	115	2,504	8,182
Production	2,168	103	2,271	7,036

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.00
Natural gas ($/Mcf) $2.00

Wellhead value of 1989 production: (thous. $)
Crude oil $465,851
Natural gas $213,656
Total $679,507

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.50
Commercial consumers $4.62
Industrial consumers $2.49
Electric utilities $1.89
All consumers $3.07

Severance taxes paid in 1989 (thous. $) $41,669

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	14	58	72
Gas	18	34	52
Dry	100	66	166
Service	- -	0	0
Total	132	158	290

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	165.8	598.2	764.0
Gas	112.9	276.7	389.6
Dry	817.1	522.6	1,339.7
Service	- -	0.0	0.0
Total	1,095.8	1,397.5	2,493.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 105
New-field wildcat footage (thous. ft.) 833.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	15th	18th
Production	12th	17th
Reserves (1988)	12th	16th

Seismic crew months worked 3
Average rotary rigs active 17

Number of producing wells: (12/31/89)
Crude oil 3,589
Flowing 363
Artificial lift 3,226
Natural gas 739
Total 4,328

Average production:	thous. bbls.	thous. b/d
Crude oil	27,403	75
NGL (est.)	0	0
Total	27,403	75

Natural gas marketed production (MMcf) 106,828
Average output per producing well:
Crude oil (bbls.) 7,635
Natural gas (Mcf) 144,558

Average number of employees in:
Oil and natural gas extraction 5,375
Refining 1,708
Transportation 2,349
Wholesale 3,186
Retail 6,632
Total petroleum industry 19,250

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	45	2	47
Production	26	1	27
Net annual change	19	1	20
Proved reserves	221	12	233

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	20	85	105
Production	10	172	182
Net annual change	10	-87	-77
Proved reserves	71	1,075	1,146

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	77,200	721,495	70.05
Gas	18,343	679,360	127.50
Dry	78,219	377,868	44.80
Total	173,761	509,564	58.08

Number of producing stripper wells 606
Number of stripper well abandonments 118

Stripper well crude oil production:
(bbls.) 780,173
(b/d) 2,132
Percentage of oil produced by stripper wells 3%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 10,975
Secondary 3,515
Total 14,490

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 54%
Natural gas — ranked 2nd 32%

State Energy Contact

Mississippi State Oil and Gas Board
P.O. Box 1332
Jackson, MS 39215
(601) 359-3725

MISSOURI

☐ Counties with oil and/or gas production

Background Information

Number of counties 114
With oil and/or gas production 6

First year of production:
Crude oil 1889
Natural gas 1887

Year and amount of peak production:
Crude oil — 285 thous. bbls. 1984
Natural gas — 1,369 MMcf 1938

Deepest producing well: (ft.)
Crude oil 2,975
Natural gas 765

Year and depth of deepest well drilled: (ft.)
1988 10,089

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	698	35%
Gas wells	187	10%
Dry holes	1,082	55%
Total	1,967	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $62,198

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	0	0	N/A
Production	N/A	0	0	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.75E
Natural gas ($/Mcf) $3.80

Wellhead value of 1989 production: (thous. $)
Crude oil $2,414
Natural gas $15
Total $2,429

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.83
Commercial consumers $4.35
Industrial consumers $4.15
Electric utilities $2.42
All consumers $4.60

Severance taxes paid in 1989 ..... Not Applicable

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	1	1
Gas	0	0	0
Dry	5	0	5
Service	- -	0	0
Total	5	1	6

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	2.0	2.0
Gas	0.0	0.0	0.0
Dry	16.8	0.0	16.8
Service	- -	0.0	0.0
Total	16.8	2.0	18.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 5
New-field wildcat footage (thous. ft.) 16.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	28th	28th
Production	30th	32nd
Reserves (1988)	N/A	N/A

Seismic crew months worked 0
Average rotary rigs active 0

Number of producing wells: (12/31/89)
Crude oil 807
Flowing 0
Artificial lift 807
Natural gas 0
Total 807

Average production:	thous. bbls.	thous. b/d
Crude oil	136	- -
NGL (est.)	0	- -
Total	136	- -

Natural gas marketed production (MMcf) 4E
Average output per producing well:
Crude oil (bbls.) 169
Natural gas (Mcf) ..... N/A

Average number of employees in:
Oil and natural gas extraction 75
Refining 306
Transportation 4,075
Wholesale 6,165
Retail 20,739
Total petroleum industry 31,360

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	0	0
Production	N/A	0	0
Net annual change	N/A	0	0
Proved reserves	N/A	0	0

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells 700
Number of stripper well abandonments 46

Stripper well crude oil production:
(bbls.) 146,735
(b/d) 401
Percentage of oil produced by stripper wells 94%

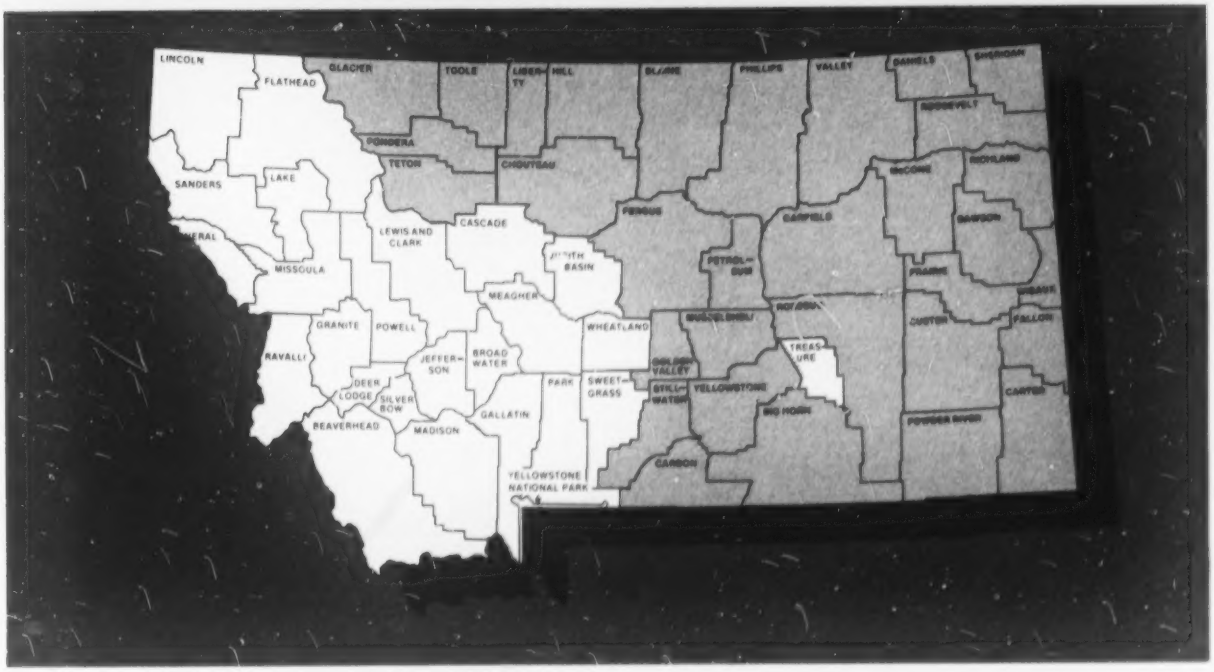
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 1,079
Secondary 957
Total 2,036

Percentage of total value of principal mineral production:
Crude oil — ranked 10th ..... Less than 1%
Natural gas — ranked 11th ..... Less than 1%

State Energy Contact

Missouri Department of Economic Development
Oil and Gas Research Division
P.O. Box 118
Jefferson City, MO 65101
(314) 751-3674

MONTANA



Counties with oil and/or gas production

Background Information

Number of counties 56
With oil and/or gas production 32

First year of production:
Crude oil 1916
Natural gas 1915

Year and amount of peak production:
Crude oil — 48,460 thous. bbls. 1968
Natural gas — 56,565 MMcf 1981

Deepest producing well: (ft.)
Crude oil 13,012
Natural gas 5,800

Year and depth of deepest well drilled: (ft.)
1989 17,818

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	10,706	37%
Gas wells	4,459	15%
Dry holes	14,041	48%
Total	29,206	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $10,498,254

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,511	44	1,555	3,070
Production	1,270	33	1,303	2,236

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.03
Natural gas ($/Mcf) $1.50

Wellhead value of 1989 production: (thous. $)
Crude oil $356,881
Natural gas $76,538
Total $433,419

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.34
Commercial consumers $4.34
Industrial consumers $2.95
Electric utilities $1.39
All consumers $4.05

Severance taxes paid in 1989 (thous. $) $58,288

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	10	18	28
Gas	13	115	128
Dry	39	31	70
Service	- -	0	0
Total	62	164	226

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	82.3	98.0	180.3
Gas	21.3	181.1	202.4
Dry	216.5	120.1	336.6
Service	- -	0.0	0.0
Total	320.1	399.2	719.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 40
New-field wildcat footage (thous. ft.) 235.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	22nd	14th
Production	14th	20th
Reserves (1988)	11th	19th

Seismic crew months worked 7
Average rotary rigs active 5

Number of producing wells: (12/31/89)
- Crude oil 4,001
  - Flowing 363
  - Artificial lift 3,638
- Natural gas 2,575
- Total 6,576

Average production:	thous. bbls.	thous. b/d
Crude oil	20,956	57
NGL (est.)	1,000	3
Total	21,956	60

Natural gas marketed production (MMcf) 51,025
Average output per producing well:
- Crude oil (bbls.) 5,238
- Natural gas (Mcf) 19,816

Average number of employees in:
- Oil and natural gas extraction 1,712
- Refining 797
- Transportation 446
- Wholesale 1,344
- Retail 3,337
- Total petroleum industry 7,636

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	17	-4	13
Production	22	1	23
Net annual change	-5	-5	-10
Proved reserves	241	11	252

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	17	76	93
Production	13	47	60
Net annual change	4	29	33
Proved reserves	101	733	834

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	31,891	346,639	58.51
Gas	3,255	44,584	27.15
Dry	36,843	233,180	55.48
Total	71,988	222,873	54.17

Number of producing stripper wells 3,267
Number of stripper well abandonments 182

Stripper well crude oil production:
- (bbls.) 2,563,528
- (b/d) 7,004

Percentage of oil produced by stripper wells 11%

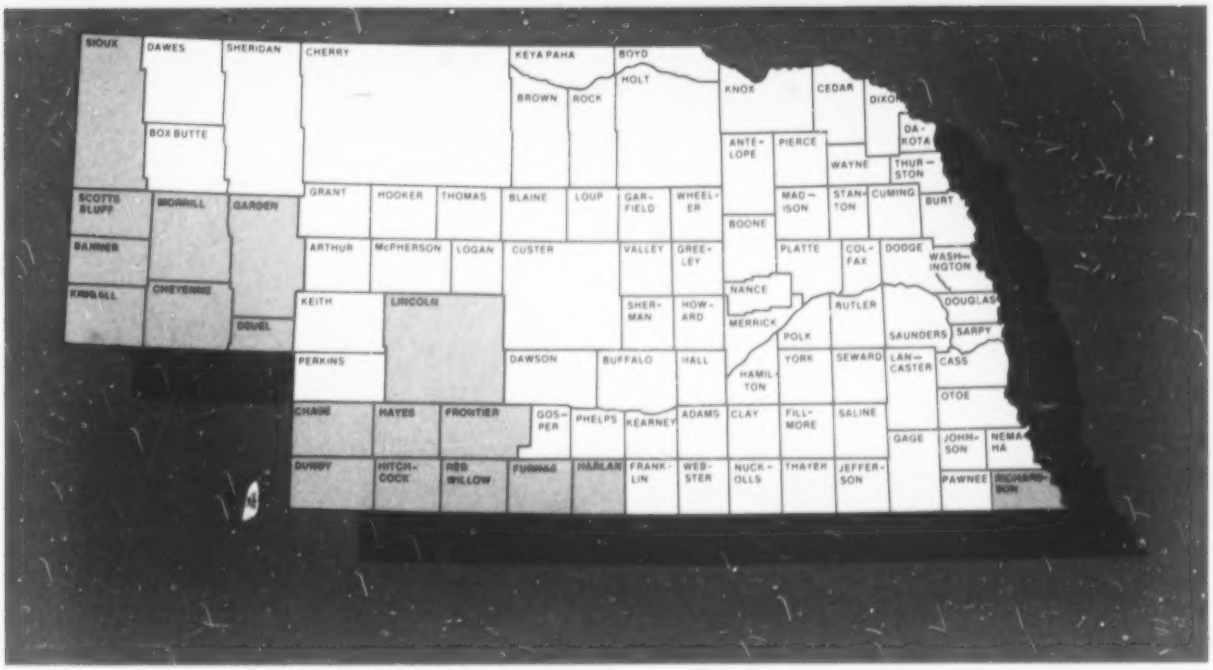
Stripper oil reserves as of 12/31/88: (thous. bbls.)
- Primary 26,253
- Secondary 4,514
- Total 30,767

Percentage of total value of principal mineral production:
- Crude oil — ranked 2nd 24%
- Natural gas — ranked 5th 7%

State Energy Contact

Montana Department of Natural Resources
Board of Oil and Gas
1520 East Sixth Avenue
Helena, MT 59620
(406) 444-6675

NEBRASKA



☐ Counties with oil and/or gas production

Background Information

Number of counties 93
With oil and/or gas production 18

First year of production:
Crude oil 1939
Natural gas 1950

Year and amount of peak production:
Crude oil — 24,894 thous. bbls. 1962
Natural gas — 15,743 MMcf 1961

Deepest producing well: (ft.)
Crude oil 8,457
Natural gas 5,832

Year and depth of deepest well drilled: (ft.)
1979 9,971

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	5,353	31%
Gas wells	222	1%
Dry holes	11,925	68%
Total	17,500	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $2,974,968

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	485	N/A	485	N/A
Production	443	N/A	443	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.36
Natural gas ($/Mcf) $2.23

Wellhead value of 1989 production: (thous. $)
Crude oil $108,188
Natural gas $1,461
Total $109,649

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.51
Commercial consumers $3.75
Industrial consumers $2.97
Electric utilities $2.27
All consumers $3.97

Severance taxes paid in 1989 (thous. $) $3,015

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	9	19	28
Gas	0	8	8
Dry	53	13	66
Service	- -	0	0
Total	62	40	102

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	59.2	98.8	158.0
Gas	0.0	31.8	31.8
Dry	255.6	67.6	323.1
Service	- -	0.0	0.0
Total	314.8	198.2	512.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 46
New-field wildcat footage (thous. ft.) 226.1

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	21st	24th
Production	20th	28th
Reserves (1988)	20th	23rd

Seismic crew months worked 51
Average rotary rigs active 1

Number of producing wells: (12/31/89)
Crude oil 1,787
Flowing 0
Artificial lift 1,787
Natural gas ..... N/A
Total 1,787

Average production:	thous. bbls.	thous. b/d
Crude oil	6,232	17
NGL (est.)	N/A	N/A
Total	6,232	17

Natural gas marketed production (MMcf) 655E
Average output per producing well:
Crude oil (bbls.) 3,487
Natural gas (Mcf) ..... N/A

Average number of employees in:
Oil and natural gas extraction 462
Refining 0
Transportation 1,530
Wholesale 2,512
Retail 7,316
Total petroleum industry 11,820

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	15	N/A	15
Production	6	N/A	6
Net annual change	9	N/A	9
Proved reserves	42	N/A	42

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	6,551	172,396	34.41
Gas	- -	- -	- -
Dry	11,670	122,843	22.40
Total	18,221	137,001	25.61

Number of producing stripper wells 1,505
Number of stripper well abandonments 30

Stripper well crude oil production:
(bbls.) 2,446,275
(b/d) 6,684
Percentage of oil produced by stripper wells 41%

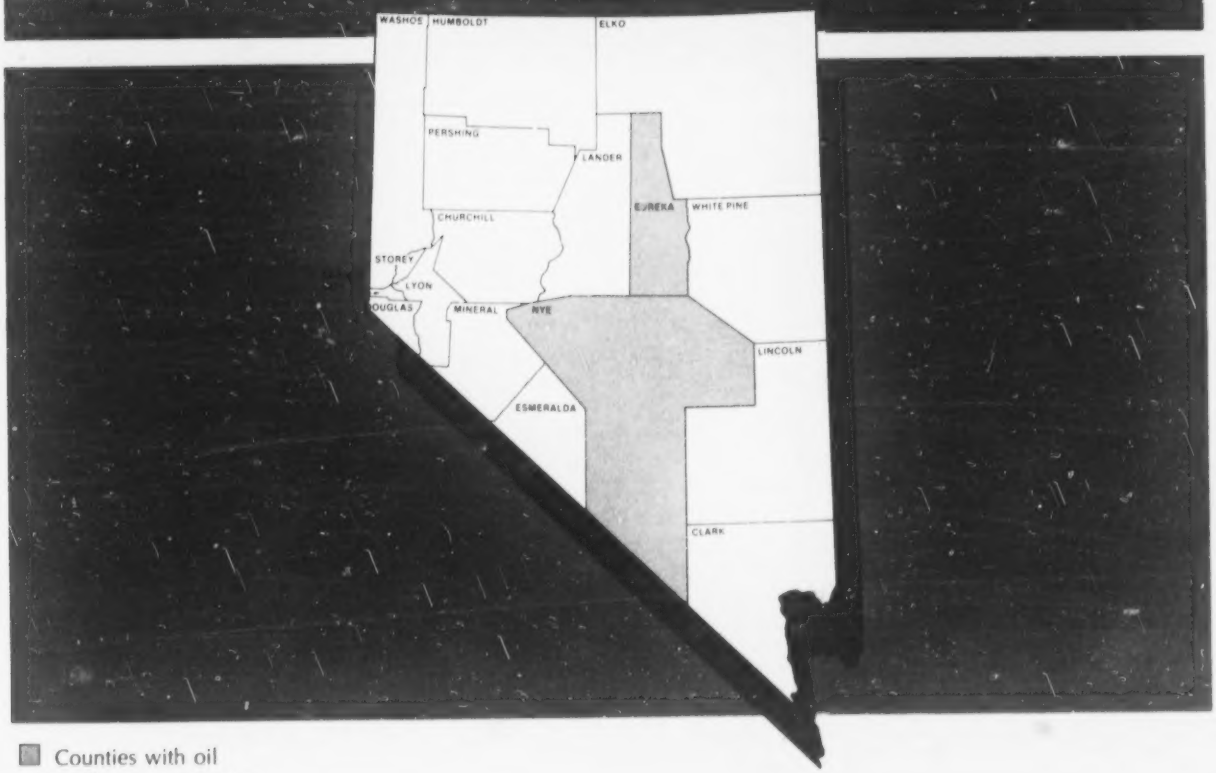
Stripper oil reserves as of 12/31/88 (thous. bbls.)
Primary 17,406
Secondary 5,588
Total 22,994

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 47%
Natural gas — ranked 5th 1%

State Energy Contact

Nebraska Oil & Gas Conservation Commission
P.O. Box 399
Sidney, NE 69162
(308) 254-4595

NEVADA



Counties with oil and/or gas production

Background Information

Number of counties 16
With oil and/or gas production 2

First year of production:
Crude oil 1954
Natural gas ..... Not Applicable

Year and amount of peak production:
Crude oil — 3,230 thous. bbls. 1988
Natural gas ..... Not Applicable

Deepest producing well: (ft.)
Crude oil 8,694
Natural gas ..... Not Applicable

Year and depth of deepest well drilled: (ft.)
1980 19,562

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	62	15%
Gas wells	1	0%
Dry holes	355	85%
Total	418	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $431,597

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	0	0	0
Production	N/A	0	0	0

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $15.80E
Natural gas ($/Mcf) ..... Not Applicable

Wellhead value of 1989 production: (thous. $)
Crude oil $50,844
Natural gas ..... Not Applicable
Total $50,844

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.51
Commercial consumers $4.42
Industrial consumers $4.81
Electric utilities $2.18
All consumers $3.82

Severance taxes paid in 1989 (thous. $) $161

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	2	6	8
Gas	0	0	0
Dry	10	0	10
Service	- -	0	0
Total	12	6	18

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	9.5	25.3	34.8
Gas	0.0	0.0	0.0
Dry	50.4	0.0	50.4
Service	- -	0.0	0.0
Total	59.9	25.3	85.2

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 10
New-field wildcat footage (thous. ft.) 50.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	26th	- -
Production	23rd	- -
Reserves (1988)	25th	23rd

Seismic crew months worked 8
Average rotary rigs active 2

Number of producing wells: (12/31/89)
Crude oil 46
Flowing 10
Artificial lift 36
Natural gas 0
Total 46

Average production:	thous. bbls.	thous. b/d
Crude oil	3,218	9
NGL (est.)	0	0
Total	3,218	9

Natural gas marketed production (MMcf) ..... N/A
Average output per producing well:
Crude oil (bbls.) 69,957
Natural gas (Mcf) ..... N/A

Average number of employees in:
Oil and natural gas extraction 169
Refining 7
Transportation 838
Wholesale 551
Retail 4,337
Total petroleum industry 5,902

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	0	0
Production	N/A	0	0
Net annual change	N/A	0	0
Proved reserves	N/A	0	0

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- -	- -	0
Production	- -	- -	0
Net annual change	- -	- -	0
Proved reserves	- -	- -	0

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

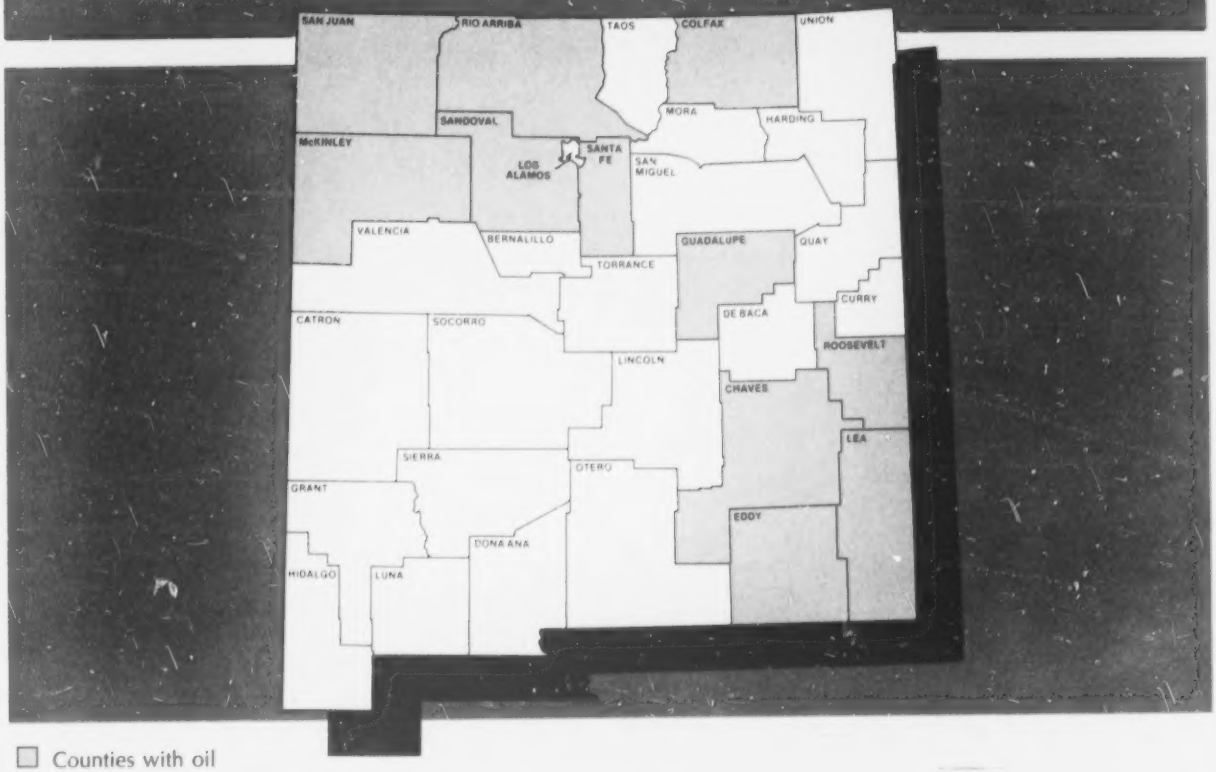
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil — ranked 5th 2%
Natural gas ..... Not Applicable

State Energy Contact

Nevada Department of Minerals
400 West King Street
Suite 106
Carson City, NV 89710
(702) 885-5050

NEW MEXICO



☐ Counties with oil and/or gas production

Background Information

Number of counties 39
With oil and/or gas production 11

First year of production:
Crude oil 1911
Natural gas 1924

Year and amount of peak production:
Crude oil — 129,227 thous. bbls. 1969
Natural gas — 1,244,779 MMcf 1974

Deepest producing well: (ft.)
Crude oil 17,652
Natural gas 17,515

Year and depth of deepest well drilled: (ft.)
1968 22,926

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	30,992	49%
Gas wells	18,637	30%
Dry holes	13,056	21%
Total	62,685	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $29,343,910

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	6,045	2,347	8,392	57,882
Production	5,384	1,324	6,708	39,399

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.86
Natural gas ($/Mcf) $1.57

Wellhead value of 1989 production: (thous. $)
Crude oil $1,227,214
Natural gas $1,333,054
Total $2,560,268

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.79
Commercial consumers $4.38
Industrial consumers $3.85
Electric utilities $2.20
All consumers $3.99

Severance taxes paid in 1989 (thous. $) $279,970

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	23	325	348
Gas	19	403	422
Dry	51	75	126
Service	- -	14	14
Total	93	817	910

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	161.8	1,988.4	2,150.2
Gas	127.5	1,681.3	1,808.8
Dry	282.5	492.0	774.5
Service	- -	32.5	32.5
Total	571.8	4,194.2	4,766.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 29
New-field wildcat footage (thous. ft.) 140.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	6th	9th
Production	7th	4th
Reserves (1988)	7th	2nd

Seismic crew months worked 38
Average rotary rigs active 36

Number of producing wells: (12/31/89)
Crude oil 17,787
Flowing 3,170
Artificial lift 14,617
Natural gas 19,191
Total 36,978

Average production:	thous. bbls.	thous. b/d
Crude oil	68,713	188
NGL (est.)	40,000	110
Total	108,713	298

Natural gas marketed production (MMcf) 849,079
Average output per producing well:
Crude oil (bbls.) 3,863
Natural gas (Mcf) 44,244

Average number of employees in:
Oil and natural gas extraction 8,529
Refining 710
Transportation 2,927
Wholesale 2,291
Retail 4,830
Total petroleum industry 19,287

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	71	299	370
Production	64	47	111
Net annual change	7	252	259
Proved reserves	661	1,023	1,684

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	193	6,462	6,655
Production	185	608	793
Net annual change	8	5,854	5,862
Proved reserves	1,453	17,030	18,483

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	150,648	382,355	61.15
Gas	118,089	365,601	73.59
Dry	61,260	387,720	53.45
Total	329,996	377,139	63.29

Number of producing stripper wells 14,723
Number of stripper well abandonments 1,087

Stripper well crude oil production:
(bbls.) 14,653,084
(b/d) 40,036
Percentage of oil produced by stripper wells 21%

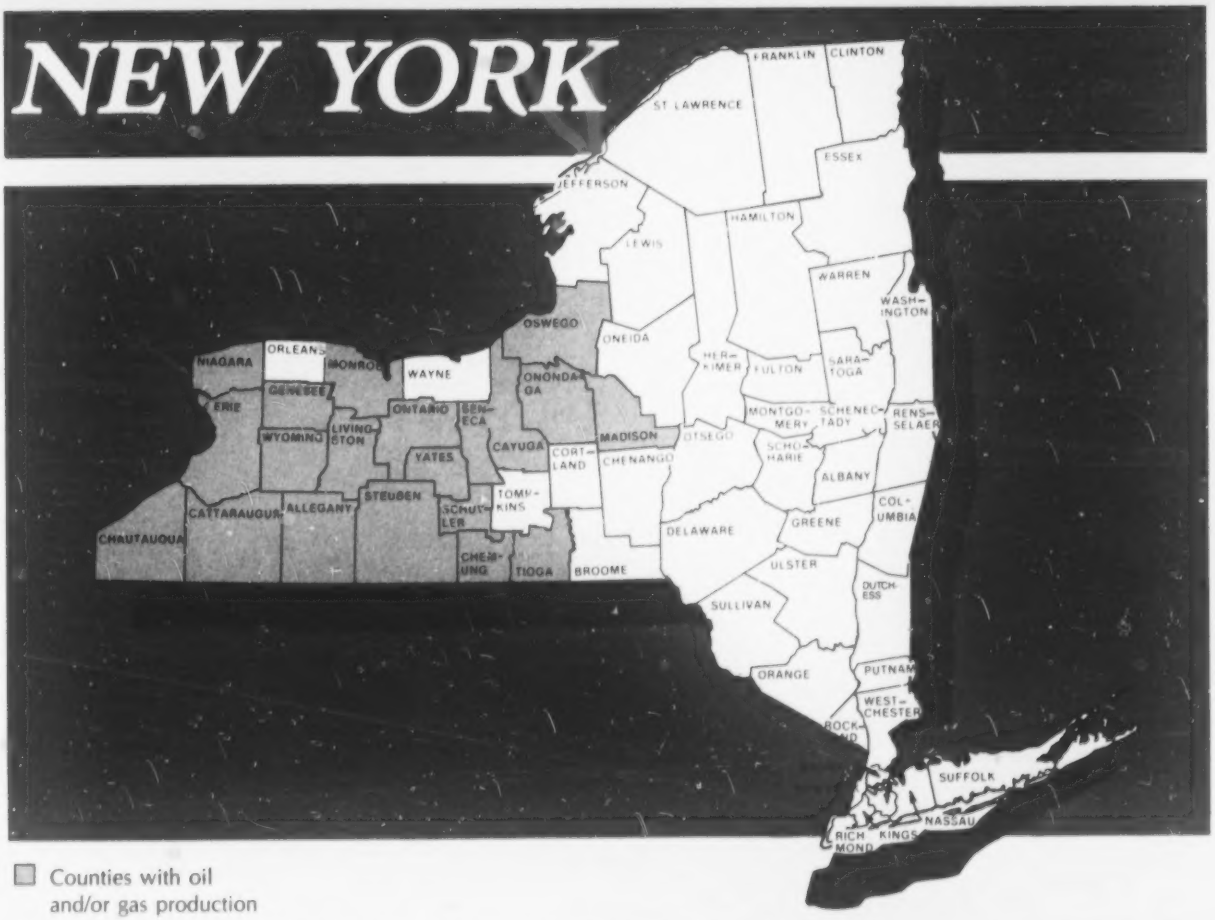
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 64,230
Secondary 34,270
Total 98,500

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 27%
Natural gas — ranked 1st 34%

State Energy Contact

New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504
(505) 827-5800

NEW YORK



Counties with oil and/or gas production

Background Information

Number of counties 62
With oil and/or gas production 23

First year of production:
Crude oil 1865
Natural gas 1885

Year and amount of peak production:
Crude oil — 6,685 thous. bbls. 1882
Natural gas — 39,402 MMcf 1938

Deepest producing well: (ft.)
Crude oil 4,634
Natural gas 7,941

Year and depth of deepest well drilled: (ft.)
1958 13,500

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	9,371	60%
Gas wells	5,053	33%
Dry holes	1,123	7%
Total	15,547	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $1,036,429

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	--	1,074
Production	N/A	N/A	--	723

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.70E
Natural gas ($/Mcf) $2.20

Wellhead value of 1989 production: (thous. $)
Crude oil $8,762
Natural gas $46,957
Total $55,719

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $7.39
Commercial consumers $5.84
Industrial consumers $4.79
Electric utilities $2.43
All consumers $5.58

Severance taxes paid in 1989 (thous. $) ..... N/A

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	11	11
Gas	1	75	76
Dry	3	6	9
Service	- -	0	0
Total	4	92	96

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	14.4	14.4
Gas	3.6	217.5	221.1
Dry	15.0	18.3	33.3
Service	- -	0.0	0.0
Total	18.6	250.2	268.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 2
New-field wildcat footage (thous. ft.) 9.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	25th	16th
Production	28th	21st
Reserves (1988)	N/A	21st

Seismic crew months worked 0
Average rotary rigs active 1

Number of producing wells: (12/31/89)
Crude oil 4,350
Flowing 1
Artificial lift 4,349
Natural gas 5,184
Total 9,534

Average production:	thous. bbls.	thous. b/d
Crude oil	495	1
NGL	N/A	N/A
Total	495	1

Natural gas marketed production (MMcf) 21,344E
Average output per producing well:
Crude oil (bbls.) 114
Natural gas (Mcf) 4,117

Average number of employees in:
Oil and natural gas extraction 1,618
Refining 2,667
Transportation 6,768
Wholesale 8,348
Retail 27,412
Total petroleum industry 46,813

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	- - -	- - -	N/A
Production	- - -	- - -	N/A
Net annual change	- - -	- - -	N/A
Proved reserves	- - -	- - -	N/A

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	0	-40	-40
Production	0	19	19
Net annual change	0	-59	-59
Proved reserves	0	351	351

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	87,906	96,388	24.78
Gas	271,146	146,724	34.30
Dry	17,183	108,066	27.49
Total	376,234	128,892	31.15

Number of producing stripper wells 4,011
Number of stripper well abandonments 290

Stripper well crude oil production:
(bbls.) 485,189
(b/d) 1,326
Percentage of oil produced by stripper wells 86%

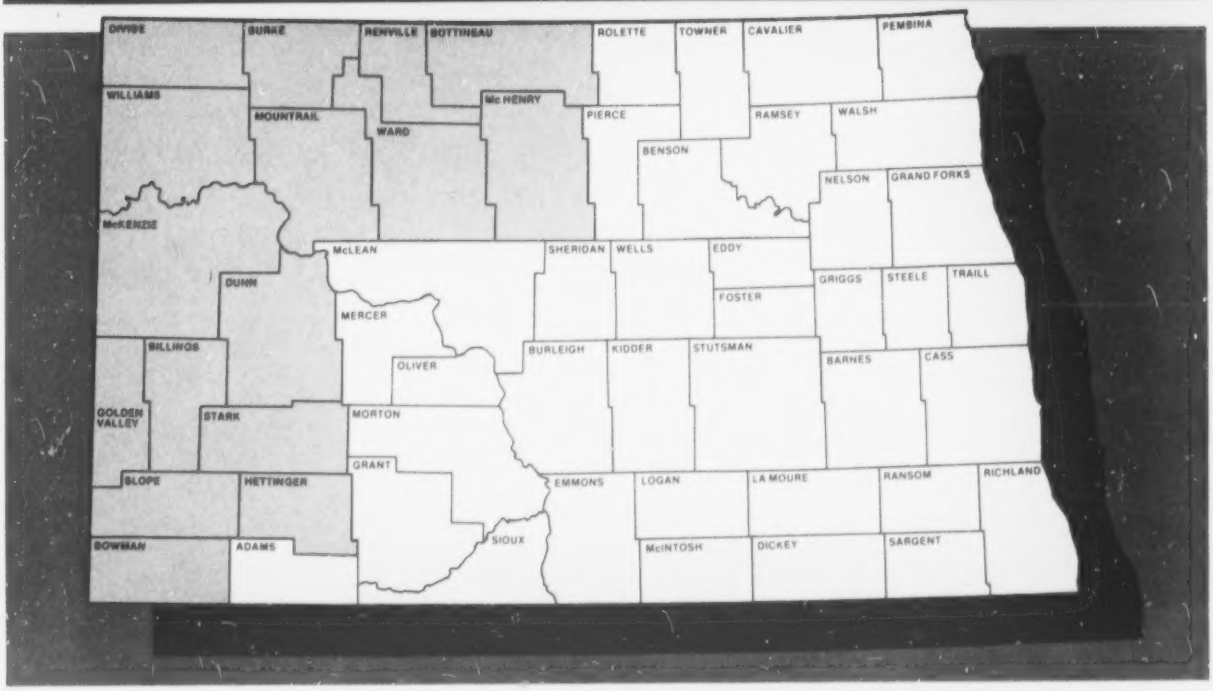
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 1,300
Secondary 700
Total 2,000

Percentage of total value of principal mineral production:
Crude oil — ranked 6th 1%
Natural gas — ranked 5th 7%

State Energy Contact

New York State Department of
Environmental Conservation
50 Wolf Road
Albany, NY 12223
(518) 457-7480

NORTH DAKOTA



☐ Counties with oil and/or gas production

Background Information

Number of counties 53
With oil and/or gas production 16

First year of production:
Crude oil 1951
Natural gas 1907

Year and amount of peak production:
Crude oil — 52,652 thous. bbls. 1984
Natural gas — 72,633 MMcf 1985

Deepest producing well: (ft.)
Crude oil 15,380
Natural gas 14,636

Year and depth of deepest well drilled: (ft.)
1978 15,380

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	5,685	50%
Gas wells	99	1%
Dry holes	5,464	49%
Total	11,248	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $13,981,107

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,161	161	1,322	2,008
Production	945	109	1,054	1,415

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.12
Natural gas ($/Mcf) $1.00

Wellhead value of 1989 production: (thous. $)
Crude oil $629,057
Natural gas $53,090
Total $682,147

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.68
Commercial consumers $4.19
Industrial consumers $3.54
Electric utilities $4.40
All consumers $4.40

Severance taxes paid in 1989 (thous. $) $59,017

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	35	70	105
Gas	0	3	3
Dry	45	27	72
Service	- -	0	0
Total	80	100	180

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	359.2	631.4	990.6
Gas	0.0	42.6	42.6
Dry	325.1	200.1	525.2
Service	- -	0.0	0.0
Total	684.3	874.2	1,558.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 36
New-field wildcat footage (thous. ft.) 272.5

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	11th	26th
Production	9th	19th
Reserves (1988)	13th	20th

Seismic crew months worked 4
Average rotary rigs active 15

Number of producing wells: (12/31/89)
- Crude oil 3,442
  - Flowing 543
  - Artificial lift 2,899
- Natural gas 103
- Total 3,545

Average production:	thous. bbls.	thous. b/d
Crude oil	36,744	101
NGL (est.)	4,000	11
Total	40,744	112

Natural gas marketed production (MMcf) 53,090
Average output per producing well:
- Crude oil (bbls.) 10,675
- Natural gas (Mcf) 515,437

Average number of employees in:
- Oil and natural gas extraction 2,541
- Refining 345
- Transportation 1,076
- Wholesale 2,225
- Retail 2,299
- Total petroleum industry 8,486

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	38	-10	28
Production	37	5	42
Net annual change	1	-15	-14
Proved reserves	216	52	268

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	64	30	94
Production	74	5	79
Net annual change	-10	25	15
Proved reserves	266	327	593

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	75,871	549,788	63.90
Gas	1,335	1,334,610	93.98
Dry	34,249	287,803	36.90
Total	111,454	431,992	52.33

Number of producing stripper wells 1,186
Number of stripper well abandonments 55

Stripper well crude oil production:
- (bbls.) 1,898,729
- (b/d) 5,185

Percentage of oil produced by stripper wells 5%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
- Primary 35,371
- Secondary 30,130
- Total 65,501

Percentage of total value of principal mineral production:
- Crude oil — ranked 1st 61%
- Natural gas — ranked 3rd 13%

State Energy Contact

North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505
(701) 224-2969

OHIO

☐ Counties with oil and/or gas production

Background Information

Number of counties 88
With oil and/or gas production 68

First year of production:
Crude oil 1860
Natural gas 1884

Year and amount of peak production:
Crude oil — 23,941 thous. bbls. 1896
Natural gas — 166,735 MMcf 1989

Deepest producing well: (ft.)
Crude oil 7,805
Natural gas 8,794

Year and depth of deepest well drilled: (ft.)
1967 11,442

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	80,235	48%
Gas wells	48,826	29%
Dry holes	37,194	23%
Total	166,255	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $5,773,868

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,027	N/A	1,027	8,039
Production	963	N/A	963	6,810

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.06
Natural gas ($/Mcf) $2.55

Wellhead value of 1989 production: (thous. $)
Crude oil $184,555
Natural gas $425,174
Total $609,729

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.33
Commercial consumers $4.90
Industrial consumers $4.12
Electric utilities $3.43
All consumers $5.13

Severance taxes paid in 1989 (thous. $) $4,816

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	3	701	704
Gas	5	362	367
Dry	9	63	72
Service	- -	1	1
Total	17	1,127	1,444

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	17.4	2,896.6	2,914.0
Gas	29.3	1,426.9	1,456.2
Dry	38.6	221.0	259.6
Service	- -	2.8	2.8
Total	85.4	4,547.3	4,632.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 4
New-field wildcat footage (thous. ft.) 21.3

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	5th	11th
Production	18th	13th
Reserves (1988)	17th	15th

Seismic crew months worked 2
Average rotary rigs active 13

Number of producing wells: (12/31/89)
Crude oil 30,194
Flowing 400
Artificial lift 29,794
Natural gas 34,232
Total 64,426

Average production:	thous. bbls.	thous. b/d
Crude oil	10,219	28
NGL	N/A	N/A
Total	10,219	28

Natural gas marketed production (MMcf) 166,735E
Average output per producing well:
Crude oil (bbls.) 338
Natural gas (Mcf) 4,871

Average number of employees in:
Oil and natural gas extraction 5,790
Refining 7,158
Transportation 8,101
Wholesale 7,385
Retail 33,768
Total petroleum industry 62,202

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	8	N/A	8
Production	10	N/A	10
Net annual change	-2	N/A	-2
Proved reserves	64	N/A	64

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-51	341	290
Production	63	69	132
Net annual change	-114	272	-158
Proved reserves	480	749	1,229

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	87,906	96,388	24.78
Gas	271,146	146,724	34.30
Dry	17,183	108,066	27.49
Total	376,234	128,892	31.15

Number of producing stripper wells 29,251
Number of stripper well abandonments 442

Stripper well crude oil production:
(bbls.) 8,507,844
(b/d) 23,245
Percentage of oil produced by stripper wells 73%

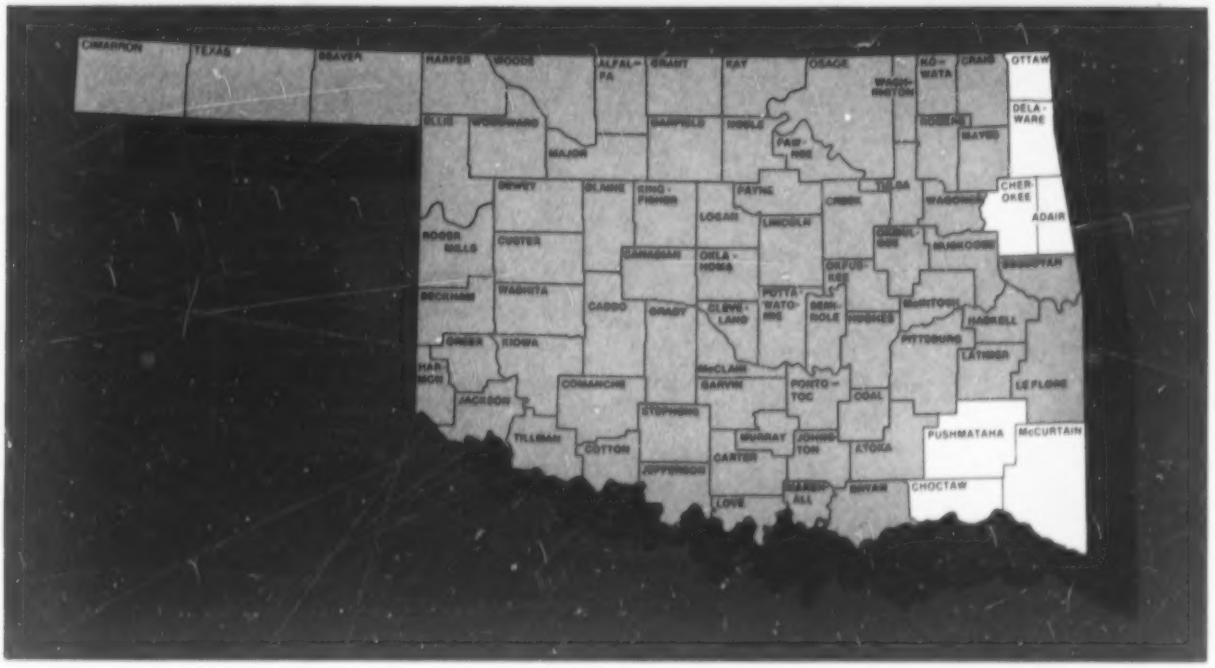
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 69,087
Secondary 229
Total 69,316

Percentage of total value of principal mineral production:
Crude oil — ranked 5th 7%
Natural gas — ranked 2nd 18%

State Energy Contact

Ohio Department of Natural Resources
Division of Oil and Gas
Fountain Square Bldg. A
Columbus, OH 43224
(614) 265-6917

OKLAHOMA



☐ Counties with oil and/or gas production

Background Information

Number of counties 77
With oil and/or gas production 70

First year of production:
Crude oil 1891
Natural gas 1902

Year and amount of peak production:
Crude oil — 277,775 thous. bbls. 1927
Natural gas — 2,019,199 MMcf 1981

Deepest producing well: (ft.)
Crude oil 22,850
Natural gas 25,152

Year and depth of deepest well drilled: (ft.)
1974 31,441

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	234,322	59%
Gas wells	47,514	12%
Dry holes	114,294	29%
Total	396,130	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $72,027,381

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	13,857	3,813	17,670	84,396
Production	13,061	3,048	16,109	66,946

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.23
Natural gas ($/Mcf) $1.59

Wellhead value of 1989 production: (thous. $)
Crude oil $2,141,897
Natural gas $3,423,507
Total $5,565,404

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.52
Commercial consumers $4.05
Industrial consumers $1.78
Electric utilities $3.05
All consumers $3.10

Severance taxes paid in 1989 (thous. $) $375,123

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	20	970	990
Gas	43	814	857
Dry	146	672	818
Service	- -	63	63
Total	209	2,519	2,728

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	110.2	4,274.0	4,384.1
Gas	355.0	5,810.8	6,165.8
Dry	800.5	3,419.6	4,220.1
Service	- -	162.6	162.6
Total	1,265.7	13,667.0	14,932.6

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 99
New-field wildcat footage (thous. ft.) 492.1

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	3rd	2nd
Production	5th	3rd
Reserves (1988)	6th	3rd

Seismic crew months worked 79
Average rotary rigs active 122

Number of producing wells: (12/31/89)
Crude oil 96,344
Flowing 4,817
Artificial lift 91,527
Natural gas 27,443
Total 123,787

Average production:	thous. bbls.	thous. b/d
Crude oil	117,493	322
NGL (est.)	79,000	216
Total	196,493	538

Natural gas marketed production (MMcf) 2,153,149
Average output per producing well:
Crude oil (bbls.) 1,220
Natural gas (Mcf) 78,459

Average number of employees in:
Oil and natural gas extraction 40,736
Refining 5,148
Transportation 6,447
Wholesale 5,070
Retail 7,422
Total Petroleum Industry 64,823

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	128	74	202
Production	120	90	210
Net annual change	8	-16	-8
Proved reserves	796	765	1,561

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	201	1,552	1,753
Production	324	1,682	2,006
Net annual change	-123	-130	-253
Proved reserves	1,894	15,556	17,450

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	311,799	259,832	53.65
Gas	581,160	638,638	86.47
Dry	241,835	252,701	45.84
Total	1,134,794	370,001	63.73

Number of producing stripper wells 74,598
Number of stripper well abandonments 2,098

Stripper well crude oil production:
(bbls.) 109,440,060
(b/d) 299,017
Percentage of oil produced by stripper wells 85%

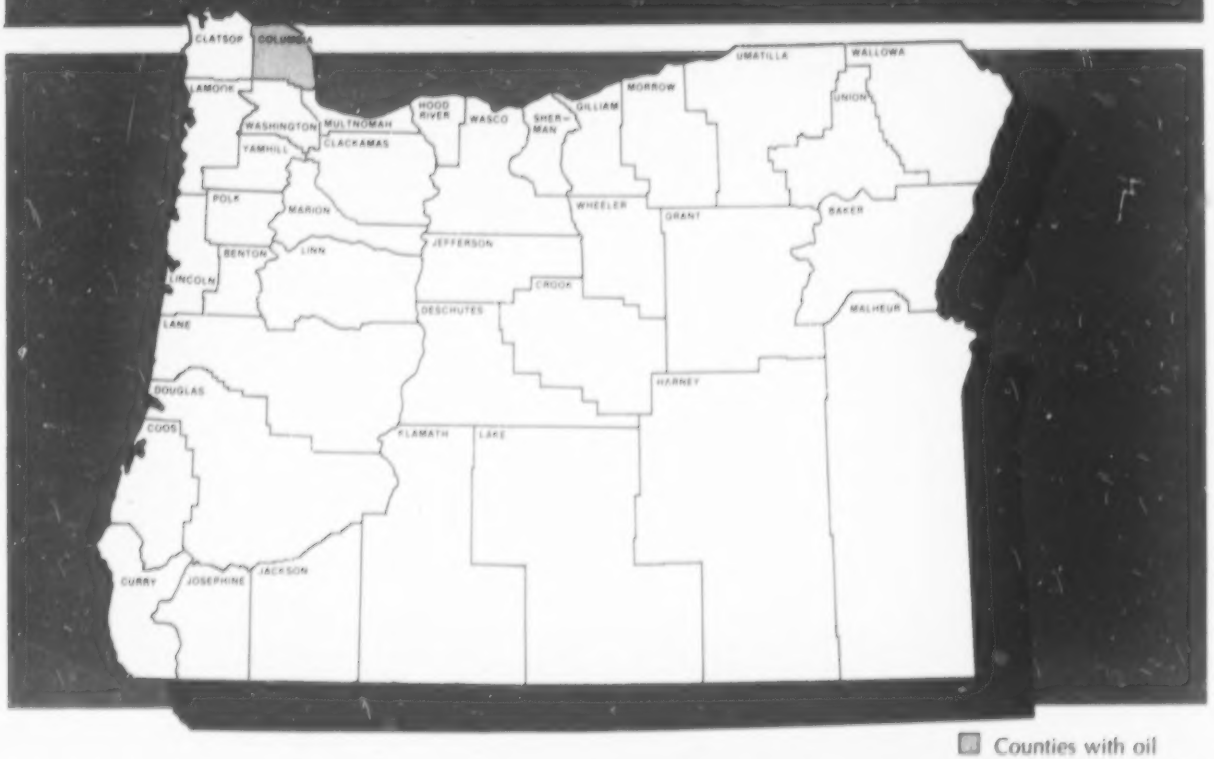
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 191,070
Secondary 198,860
Total 389,930

Percentage of total value of principal mineral production:
Crude oil — ranked 2nd 35%
Natural gas — ranked 1st 60%

State Energy Contact

Oklahoma Corporation Commission
Oil and Gas Division
Jim Thorpe Building
Oklahoma City, OK 73105
(405) 521-2301

OREGON



Counties with oil and/or gas production

Background Information

Number of counties 36
With oil and/or gas production 1

First year of production:
Crude oil ..... Not Applicable
Natural gas 1979

Year and amount of peak production:
Crude oil ..... Not Applicable
Natural gas — 5,000 MMcf 1980/1981

Deepest producing well: (ft.)
Crude oil ..... Not Applicable
Natural gas 3,027

Year and depth of deepest well drilled: (ft.)
1979 13,177

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	0	0%
Gas wells	34	10%
Dry holes	316	90%
Total	350	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) ..... Not Applicable

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	- -	40
Production	N/A	N/A	- -	19

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) ..... Not Applicable
Natural gas ($/Mcf) $1.40

Wellhead value of 1989 production: (thous. $)
Crude oil ..... Not Applicable
Natural gas $5,880
Total $5,880

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $6.19
Commercial consumers $4.89
Industrial consumers $3.53
Electric utilities ..... N/A
All consumers $5.18

Severance taxes paid in 1989 (thous. $) $53

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	4	4
Dry	8	2	10
Service	- -	0	0
Total	8	6	14

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	8.1	8.1
Dry	18.9	5.8	24.7
Service	- -	0.0	0.0
Total	18.9	13.9	32.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 8
New-field wildcat footage (thous. ft.) 18.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	- -	25th
Production	- -	25th
Reserves (1988)	- -	23rd

Seismic crew months worked 2
Average rotary rigs active 0

Number of producing wells: (12/31/89)
Crude oil 0
Flowing 0
Artificial lift 0
Natural gas ..... N/A
Total 0

Average production:	thous. bbls.	thous. b/d
Crude oil	0	0
NGL (est.)	0	0
Total	0	0

Natural gas marketed production (MMcf) 4,200E
Average output per producing well:
Crude oil (bbls.) ..... N/A
Natural gas (Mcf) ..... N/A

Average number of employees in:
Oil and natural gas extraction 50
Refining 0
Transportation 1,370
Wholesale 2,723
Retail 9,117
Total petroleum industry 13,260

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	- -	- -	N/A
Production	- -	- -	N/A
Net annual change	- -	- -	N/A
Proved reserves	- -	- -	N/A

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- - -	- - -	N/A
Production	- - -	- - -	N/A
Net annual change	- - -	- - -	N/A
Proved reserves	- - -	- - -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- - -	- - -
Gas	N/A	- - -	- - -
Dry	N/A	- - -	- - -
Total	N/A	- - -	- - -

Number of producing stripper wells 0
Number of stripper well abandonments 0

Stripper well crude oil production:
(bbls.) 0
(b/d) 0
Percentage of oil produced by stripper wells 0

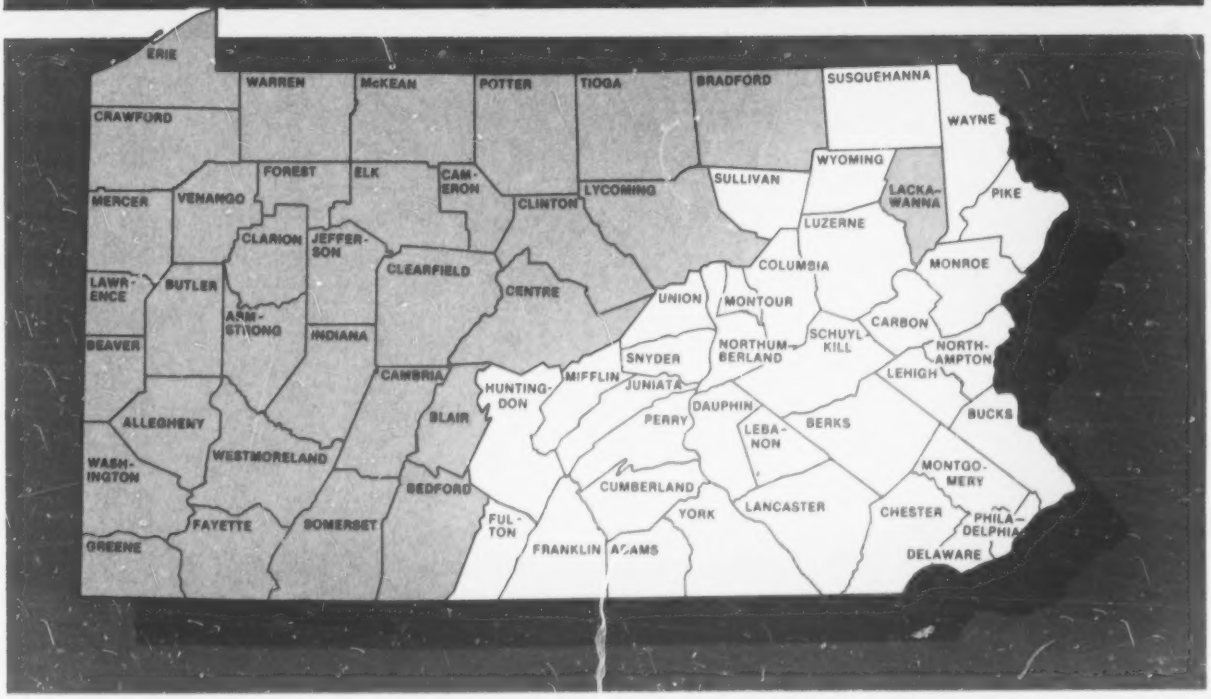
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 0
Secondary 0
Total 0

Percentage of total value of principal mineral production:
Crude oil ..... Not Applicable
Natural gas — ranked 4th 3%

State Energy Contact

Oregon Department of Geology and
Mineral Industries
910 State Office Building
Portland, OR 97201
(503) 229-5580

PENNSYLVANIA



☐ Counties with oil and/or gas production

Background Information

Number of counties 67
With oil and/or gas production 33

First year of production:
Crude oil 1859
Natural gas 1881

Year and amount of peak production:
Crude oil — 31,424 thous. bbls. 1891
Natural gas — 166,342 MMcf 1984

Deepest producing well: (ft.)
Crude oil 8,494
Natural gas 19,365

Year and depth of deepest well drilled: (ft.)
1974 21,640

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	250,459	78%
Gas wells	33,473	10%
Dry holes	38,601	12%
Total	322,533	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $4,132,767

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,348	N/A	1,348	117,207
Production	1,321	N/A	1,321	10,368

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.15
Natural gas ($/Mcf) $2.22

Wellhead value of 1989 production: (thous. $)
Crude oil $49,041
Natural gas $375,025
Total $424,066

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $6.15
Commercial consumers $5.53
Industrial consumers $3.83
Electric utilities $3.57
All consumers $5.65

Severance taxes paid in 1989 ..... Not Applicable

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	73	73
Gas	22	736	758
Dry	8	24	32
Service	- -	0	0
Total	30	833	863

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	113.1	113.1
Gas	137.9	3,256.8	3,394.7
Dry	43.8	98.2	142.0
Service	- -	0.0	0.0
Total	181.7	3,468.2	3,649.8

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 4
New-field wildcat footage (thous. ft.) 14.7

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	14th	3rd
Production	24th	11th
Reserves (1988)	23rd	11th

Seismic crew months worked 0
Average rotary rigs active 17

Number of producing wells: (12/31/89)
Crude oil 27,218
Flowing 0
Artificial lift 27,218
Natural gas 29,000
Total 56,218

Average production:	thous. bbls.	thous. b/d
Crude oil	2,702	7
NGL	N/A	N/A
Total	2,702	7

Natural gas marketed production (MMcf) 168,930E
Average output per producing well:
Crude oil (bbls.) 99
Natural gas (Mcf) 5,825

Average number of employees in:
Oil and natural gas extraction 3,700
Refining 9,100
Transportation 9,100
Wholesale 10,100
Retail 27,800
Total petroleum industry 59,800

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	3	N/A	3
Production	2	N/A	2
Net annual change	1	N/A	1
Proved reserves	27	N/A	27

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	-12	598	586
Production	1	161	162
Net annual change	-13	437	424
Proved reserves	8	2,066	2,074

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	87,906	96,388	24.78
Gas	271,146	146,724	34.30
Dry	17,183	108,066	27.49
Total	376,234	128,892	31.15

Number of producing stripper wells 17,303
Number of stripper well abandonments 943

Stripper well crude oil production:
(bbls.) 2,583,222
(b/d) 7,058
Percentage of oil produced by stripper wells 92%

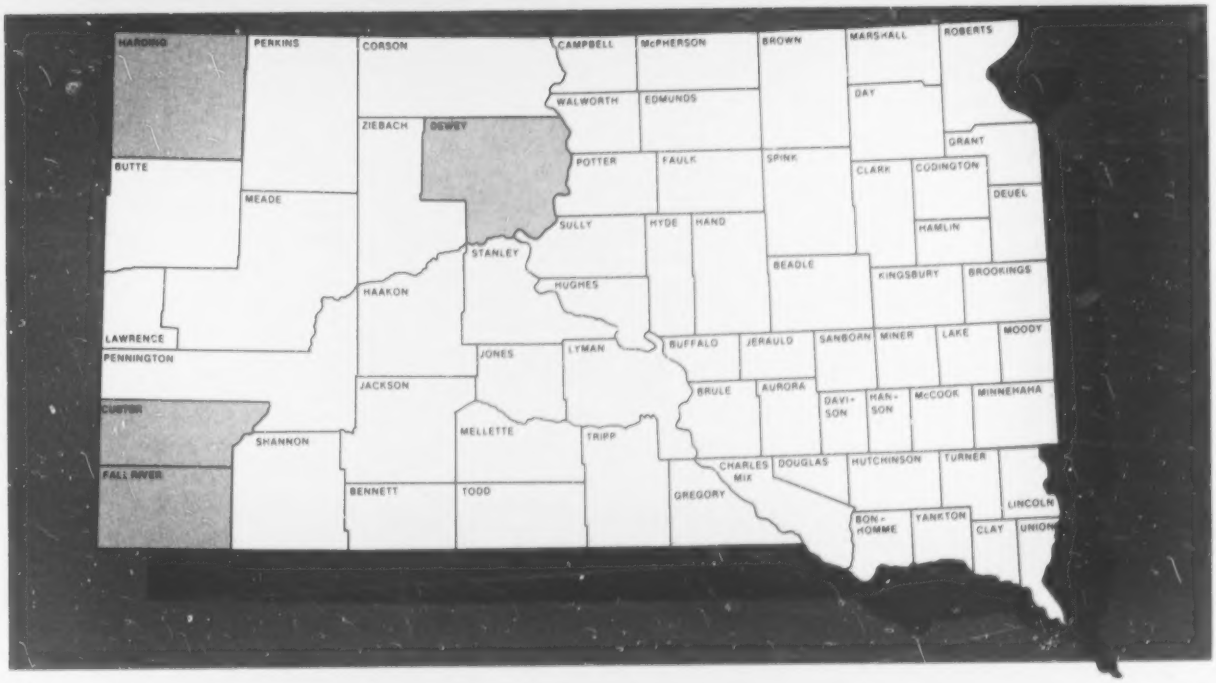
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 6,394
Secondary 18,577
Total 24,971

Percentage of total value of principal mineral production:
Crude oil — ranked 7th 1%
Natural gas — ranked 3rd 10%

State Energy Contact

Pennsylvania Dept. of Environmental Resources
Oil and Gas Division
P.O. Box 2063
Harrisburg, PA 17120
(717) 787-2814

SOUTH DAKOTA



Counties with oil and/or gas production

Background Information

Number of counties 66
With oil and/or gas production 4

First year of production:
Crude oil 1954
Natural gas 1979

Year and amount of peak production:
Crude oil — 1,657 thous. bbls. 1988
Natural gas — 4,468 MMcf (est.) 1989

Deepest producing well: (ft.)
Crude oil 9,150
Natural gas 3,550

Year and depth of deepest well drilled: (ft.)
1976 9,771

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	230	20%
Gas wells	65	6%
Dry holes	848	74%
Total	1,143	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $385,194

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	--	N/A
Production	N/A	N/A	--	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.33
Natural gas ($/Mcf) $1.10

Wellhead value of 1989 production: (thous. $)
Crude oil $27,953
Natural gas $4,915
Total $32,868

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.85
Commercial consumers $4.00
Industrial consumers $3.08
Electric utilities ..... N/A
All consumers $4.30

Severance taxes paid in 1989 (thous. $) $1,023

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	6	6
Gas	0	0	0
Dry	7	1	8
Service	- -	0	0
Total	7	7	14

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	51.8	51.8
Gas	0.0	0.0	0.0
Dry	28.5	3.8	32.2
Service	- -	0.0	0.0
Total	28.5	55.6	84.0

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 6
New-field wildcat footage (thous. ft.) 25.6

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	27th	28th
Production	26th	24th
Reserves (1988)	N/A	N/A

Seismic crew months worked 0
Average rotary rigs active 1

Number of producing wells: (12/31/89)
Crude oil 156
Flowing 0
Artificial lift 156
Natural gas 54
Total 210

Average production:	thous. bbls.	thous. b/d
Crude oil	1,613	4
NGL (est.)	0	0
Total	1,613	4

Natural gas marketed production (MMcf) 4,468E
Average output per producing well:
Crude oil (bbls.) 10,340
Natural gas (Mcf) 82,741

Average number of employees in:
Oil and natural gas extraction 109
Refining 0
Transportation 176
Wholesale 1,570
Retail 2,780
Total petroleum industry 4,635

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	0	0
Production	N/A	0	0
Net annual change	N/A	0	0
Proved reserves	N/A	0	0

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- - -	- - -	N/A
Production	- - -	- - -	N/A
Net annual change	- - -	- - -	N/A
Proved reserves	- - -	- - -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- - -	- - -
Gas	N/A	- - -	- - -
Dry	N/A	- - -	- - -
Total	N/A	- - -	- - -

Number of producing stripper wells 17
Number of stripper well abandonments 1

Stripper well crude oil production:
(bbls.) 39,461
(b/d) 108
Percentage of oil produced by stripper wells 2%

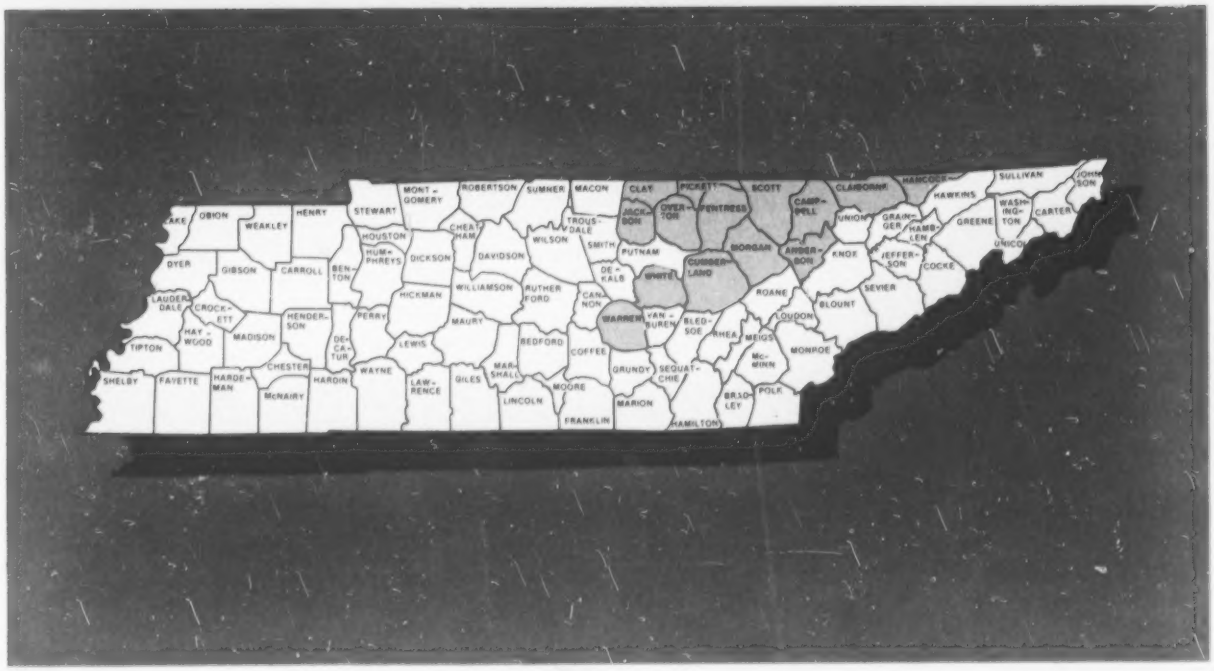
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 173
Secondary 166
Total 339

Percentage of total value of principal mineral production:
Crude oil — ranked 4th 7%
Natural gas — ranked 6th 2%

State Energy Contact

South Dakota Geological Survey
University of South Dakota Science Center
Vermillon, SD 57069
(605) 677-5227

TENNESSEE



☐ Counties with oil and/or gas production

Background Information

Number of counties 95
With oil and/or gas production 14

First year of production:
Crude oil 1860
Natural gas 1889

Year and amount of peak production:
Crude oil — 1,132 thous. bbls. 1982
Natural gas — 5,022 MMcf 1984

Deepest producing well: (ft.)
Crude oil 10,141
Natural gas 4,624

Year and depth of deepest well drilled: (ft.)
1982 11,540

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	1,709	27%
Gas wells	1,657	27%
Dry holes	2,886	46%
Total	6,252	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $281,084

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	N/A	- - -	N/A
Production	N/A	N/A	- - -	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.00E
Natural gas ($/Mcf) $1.65

Wellhead value of 1989 production: (thous. $)
Crude oil $9,576
Natural gas $2,699
Total $12,275

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.83
Commercial consumers $4.47
Industrial consumers $3.30
Electric utilities ..... N/A
All consumers $4.11

Severance taxes paid in 1989 (thous. $) $337

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	1	24	25
Gas	0	16	16
Dry	5	5	10
Service	- -	0	0
Total	6	45	51

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.9	42.4	43.4
Gas	0.0	29.0	29.0
Dry	8.5	8.0	16.5
Service	- -	0.0	0.0
Total	9.5	79.4	88.9

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 3
New-field wildcat footage (thous. ft.) 3.9

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	23rd	22nd
Production	27th	26th
Reserves (1988)	N/A	N/A

Seismic crew months worked 0
Average rotary rigs active 0

Number of producing wells: (12/31/89)
Crude oil 713
Flowing 0
Artificial lift 713
Natural gas 598
Total 1,311

Average production:	thous. bbls.	thous. b/d
Crude oil	532	1
NGL (est.)	N/A	N/A
Total	532	1

Natural gas marketed production (MMcf) 1,636E
Average output per producing well:
Crude oil (bbls.) 746
Natural gas (Mcf) 2,736

Average number of employees in:
Oil and natural gas extraction 248
Refining 431
Transportation 1,860
Wholesale 5,715
Retail 11,513
Total petroleum industry 19,767

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	N/A	- - -
Production	N/A	N/A	- - -
Net annual change	N/A	N/A	- - -
Proved reserves	N/A	N/A	- - -

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	- - -	- - -	N/A
Production	- - -	- - -	N/A
Net annual change	- - -	- - -	N/A
Proved reserves	- - -	- - -	N/A

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- - -	- - -
Gas	N/A	- - -	- - -
Dry	N/A	- - -	- - -
Total	N/A	- - -	- - -

Number of producing stripper wells 934
Number of stripper well abandonments 105

Stripper well crude oil production:
(bbls.) 488,579
(b/d) 1,335
Percentage of oil produced by stripper wells 81%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 472
Secondary 158
Total 630

Percentage of total value of principal mineral production:
Crude oil — ranked 7th 1%
Natural gas — ranked 8th ..... Less than 1%

State Energy Contact

Tennessee Department of Conservation
Oil and Gas Division
701 Broadway Street
Nashville, TN 37203
(615) 742-6694

TEXAS

Counties with oil and/or gas production

Background Information

Number of counties	254
With oil and/or gas production	217
First year of production:	
Crude oil	1889
Natural gas	1889
Year and amount of peak production:	
Crude oil — 1,301,685 thous. bbls.	1972
Natural gas — 8,657,840 MMcf	1972
Deepest producing well: (ft.)	
Crude oil	28,500
Natural gas	26,536
Year and depth of deepest well drilled: (ft.)	
1982	29,670

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	507,920	58%
Gas wells	79,802	9%
Dry holes	283,972	33%
Total	871,694	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $374,046,649

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	66,778	14,723	81,501	328,216
Production	59,657	12,018	71,675	280,034

Value of Oil and Gas

Average 1989 wellhead price:	
Crude oil ($/bbl.)	$17.81
Natural gas ($/Mcf)	$1.53
Wellhead value of 1989 production: (thous. $)	
Crude oil	$12,753,046
Natural gas	$9,496,249
Total	$22,249,295

Average 1989 natural gas price to: ($/Mcf)	
Residential consumers	$5.59
Commercial consumers	$4.38
Industrial consumers	$2.23
Electric utilities	$2.23
All consumers	$2.76

Severance taxes paid in 1989 (thous. $) ..... $ 1,168,018

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	167	3,455	3,622
Gas	276	1,503	1,779
Dry	1,214	1,364	2,578
Service	- -	335	335
Total	1,657	6,657	8,314

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	1,006.6	16,514.3	17,520.9
Gas	2,155.4	11,156.1	13,311.5
Dry	7,435.5	6,049.4	13,484.9
Service	- -	1,322.1	1,322.1
Total	10,597.5	35,041.9	45,639.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 605
New-field wildcat footage (thous. ft.) 4,515.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	1st	1st
Production	1st	1st
Reserves (1988)	1st	1st

Seismic crew months worked 206
Average rotary rigs active 263

Number of producing wells: (12/31/89)
Crude oil 186,226
Flowing 12,548
Artificial lift 173,678
Natural gas 46,792
Total 233,018

Average production:	thous. bbls.	thous. b/d
Crude oil	716,061	1,962
NGL (est.)	249,000	682
Total	965,061	2,644

Natural gas marketed production (MMcf) 6,206,699

Average output per producing well:
Crude oil (bbls.) 3,845
Natural gas (Mcf) 132,644
Average number of employees in:
Oil and natural gas extraction 159,261
Refining 26,994
Transportation 32,613
Wholesale 28,183
Retail 33,017
Total petroleum industry 280,068

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	637	103	740
Production	716	308	1,024
Net annual change	-79	-205	-284
Proved reserves	7,121	2,706	9,827

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	806	4,615	5,421
Production	1,041	5,152	6,193
Net annual change	-235	-537	-772
Proved reserves	9,627	39,054	48,681

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	1,089,471	232,843	46.19
Gas	1,153,216	691,791	91.08
Dry	843,718	282,937	52.15
Total	3,086,405	330,875	58.87

Number of producing stripper wells 123,802
Number of stripper well abandonments 5,924

Stripper well crude oil production:
(bbls.) 140,503,798
(b/d) 383,890
Percentage of oil produced by stripper wells 19%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 909,660
Secondary 965,930
Total 1,875,590

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 49%
Natural gas — ranked 2nd 42%

State Energy Contact

Texas Railroad Commission
Office of Information Services
P.O. Drawer 12967
Austin, TX 78711
(512) 463-6710

UTAH

Counties with oil and/or gas production

Background Information

Number of counties 29
With oil and/or gas production 10

First year of production:
Crude oil 1907
Natural gas 1886

Year and amount of peak production:
Crude oil — 42,301 thous. bbls. 1975
Natural gas — 94,255 MMcf 1982

Deepest producing well: (ft.)
Crude oil 17,732
Natural gas 19,500

Year and depth of deepest well drilled: (ft.)
1982 21,874

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	3,524	41%
Gas wells	1,399	16%
Dry holes	3,737	43%
Total	8,660	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $10,503,973

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	1,143	548	1,691	4,042
Production	873	126	999	2,057

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.60
Natural gas ($/Mcf) $2.25

Wellhead value of 1989 production: (thous. $)
Crude oil $528,538
Natural gas $267,010
Total $795,548

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.14
Commercial consumers $4.17
Industrial consumers $3.36
Electric utilities ..... N/A
All consumers $4.67

Severance taxes paid in 1989 (thous. $) $23,199

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	4	36	40
Gas	4	13	17
Dry	17	7	24
Service	- -	2	2
Total	25	58	83

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	26.7	221.6	248.3
Gas	28.5	50.4	78.9
Dry	122.8	19.0	141.8
Service	- -	11.5	11.5
Total	178.0	302.5	480.5

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 16
New-field wildcat footage (thous. ft.) 119.8

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	18th	20th
Production	11th	16th
Reserves (1988)	9th	13th

Seismic crew months worked 14
Average rotary rigs active 5

Number of producing wells: (12/31/89)
Crude oil 2,234
Flowing 112
Artificial lift 2,122
Natural gas 834
Total 3,068

Average production:	thous. bbls.	thous. b/d
Crude oil	28,416	78
NGL (est.)	7,000	19
Total	35,416	97

Natural gas marketed production (MMcf) 118,671
Average output per producing well:
Crude oil (bbls.) 12,720
Natural gas (Mcf) 142,291

Average number of employees in:
Oil and natural gas extraction 1,891
Refining 1,740
Transportation 2,310
Wholesale 1,157
Retail 5,857
Total petroleum industry 12,955

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	-3	41	38
Production	21	9	30
Net annual change	-24	32	8
Proved reserves	260	162	422

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	35	-331	-296
Production	31	30	61
Net annual change	4	-361	-357
Proved reserves	475	1,509	1,984

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well($)	Cost/ ft. ($)
Oil	36,084	622,138	97.11
Gas	12,614	548,450	95.74
Dry	15,763	384,474	74.68
Total	64,462	528,375	90.23

Number of producing stripper wells 796
Number of stripper well abandonments 48

Stripper well crude oil production:
(bbls.) 932,863
(b/d) 2,549
Percentage of oil produced by stripper wells 3%

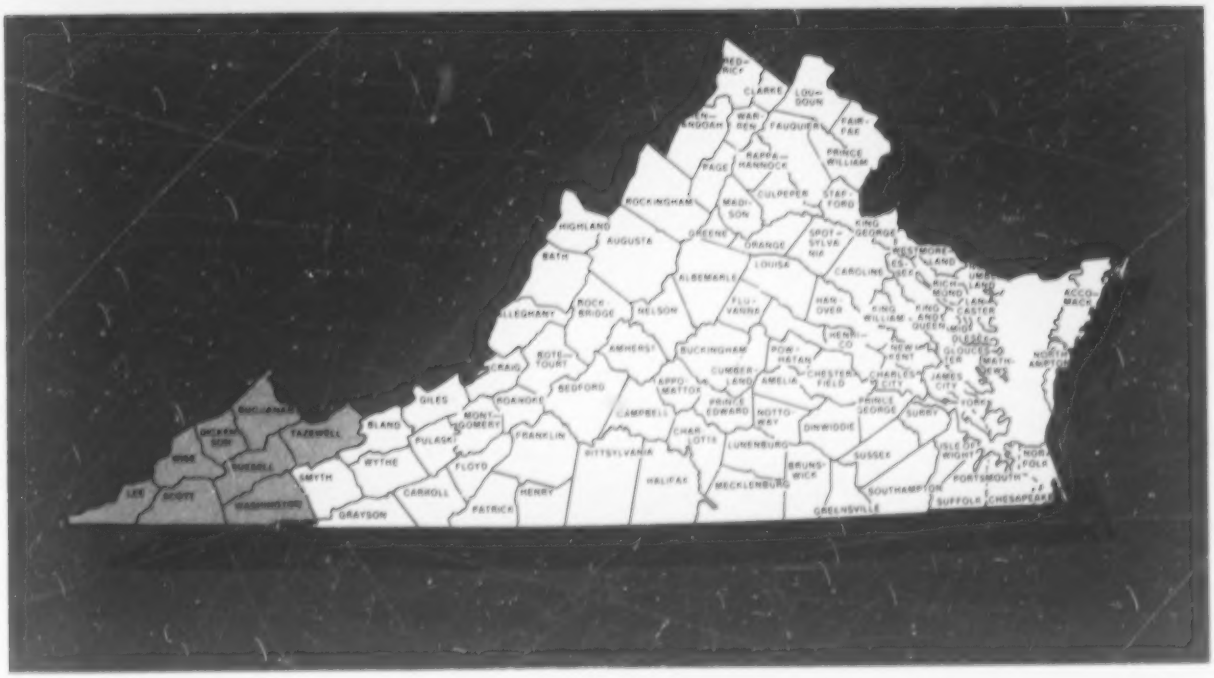
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 10,980
Secondary 10,350
Total 21,330

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 22%
Natural gas — ranked 4th 11%

State Energy Contact

Department of Natural Resources
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180
(801) 538-5340

VIRGINIA



☐ Counties with oil and/or gas production

Background Information

Number of counties 96
With oil and/or gas production 18

First year of production:
Crude oil 1943
Natural gas 1931

Year and amount of peak production:
Crude oil — 65 thous. bbls. 1983
Natural gas —19,223 MMcf 1987

Deepest producing well: (ft.)
Crude oil 5,175
Natural gas 7,238

Year and depth of deepest well drilled: (ft.)
1977 17,003

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	66	7%
Gas wells	691	76%
Dry holes	150	17%
Total	907	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $8,972

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	N/A	0	0	N/A
Production	N/A	0	0	N/A

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $18.17E
Natural gas ($/Mcf) $2.19

Wellhead value of 1989 production: (thous. $)
Crude oil $382
Natural gas $38,735
Total $39,117

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $6.77
Commercial consumers $4.89
Industrial consumers $4.28
Electric utilities $2.64
All consumers $5.75

Severance taxes paid in 1989 ..... Not Applicable

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	0	0
Gas	0	16	16
Dry	2	4	6
Service	- -	0	0
Total	2	20	22

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	0.0	0.0
Gas	0.0	84.2	84.2
Dry	15.1	14.0	29.1
Service	- -	0.0	0.0
Total	15.1	98.2	113.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 1
New-field wildcat footage (thous. ft.) 10.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	29th	21st
Production	31st	22nd
Reserves (1988)	N/A	21st

Seismic crew months worked 0
Average rotary rigs active 2

Number of producing wells: (12/31/89)
Crude oil 20
Flowing 0
Artificial lift 20
Natural gas 739
Total 759

Average production:	thous. bbls.	thous. b/d
Crude oil	21	- -
NGL (est.)	N/A	- -
Total	21	- -

Natural gas marketed production (MMcf) 17,687E
Average output per producing well:
Crude oil (bbls.) 1,050
Natural gas (Mcf) 23,934

Average number of employees in:
Oil and natural gas extraction 266
Refining 299
Transportation 3,001
Wholesale 8,669
Retail 15,946
Total petroleum industry 28,181

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	N/A	0	0
Production	N/A	0	0
Net annual change	N/A	0	0
Proved reserves	N/A	0	0

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	0	0	0
Production	0	18	18
Net annual change	0	-18	-18
Proved reserves	0	230	230

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	N/A	- -	- -
Gas	N/A	- -	- -
Dry	N/A	- -	- -
Total	N/A	- -	- -

Number of producing stripper wells 53
Number of stripper well abandonments 2

Stripper well crude oil production:
(bbls.) 15,707
(b/d) 43
Percentage of oil produced by stripper wells 63%

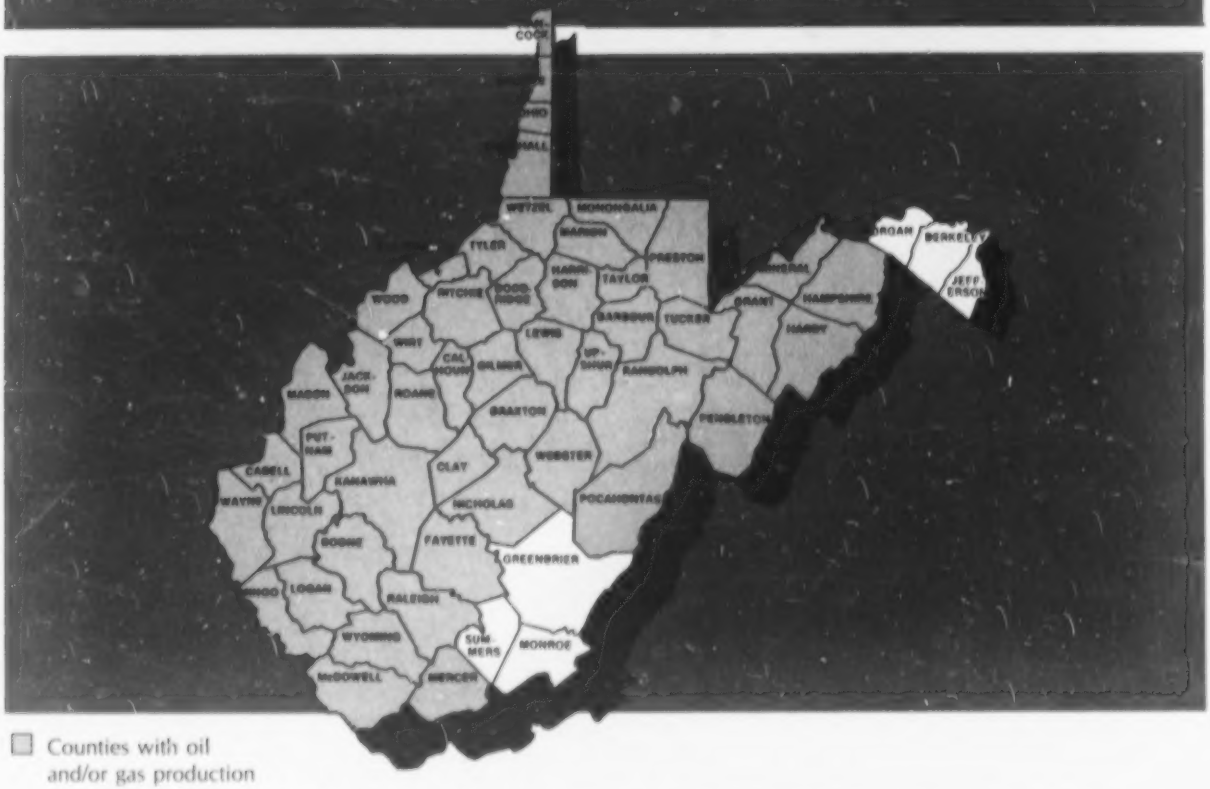
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 71
Secondary 10
Total 81

Percentage of total value of principal mineral production:
Crude oil — ranked 8th ..... Less than 1%
Natural gas — ranked 5th 2%

State Energy Contact

Virginia Energy Department
Office of Oil and Gas
P.O. Box 1197
Richmond, VA 23209
(804) 786-3611

WEST VIRGINIA



Counties with oil and/or gas production

Background Information

Number of counties 55
With oil and/or gas production 49

First year of production:
Crude oil 1860
Natural gas 1885

Year and amount of peak production:
Crude oil — 16,196 thous. bbls. 1900
Natural gas — 242,452 MMcf 1970

Deepest producing well: (ft.)
Crude oil 6,785
Natural gas 14,300

Year and depth of deepest well drilled: (ft.)
1974 20,222

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	47,941	42%
Gas wells	47,945	41%
Dry holes	19,603	17%
Total	115,489	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $2,168,575

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	587	378	965	19,064
Production	554	286	840	16,624

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $17.18
Natural gas ($/Mcf) $3.10

Wellhead value of 1989 production: (thous. $)
Crude oil $38,535
Natural gas $614,420
Total $652,955

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $5.72
Commercial consumers $5.47
Industrial consumers $3.10
Electric utilities $4.59
All consumers $5.47

Severance taxes paid in 1989 (thous. $) $24,965

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	0	31	31
Gas	6	726	732
Dry	0	13	13
Service	- -	0	0
Total	6	770	776

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	0.0	79.7	79.7
Gas	34.8	3,378.1	3,412.8
Dry	0.0	46.9	46.9
Service	- -	0.0	0.0
Total	34.8	3,504.6	3,539.4

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 1
New-field wildcat footage (thous. ft.) 8.4

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	20th	4th
Production	25th	10th
Reserves (1988)	22nd	10th

Seismic crew months worked 0
Average rotary rigs active 16

Number of producing wells: (12/31/89)
Crude oil 15,940
Flowing 0
Artificial lift 15,940
Natural gas 36,240
Total 52,180

Average production:	thous. bbls.	thous. b/d
Crude oil	2,243	6
NGL (est.)	7,000	19
Total	9,243	25

Natural gas marketed production (MMcf) 198,200
Average output per producing well:
Crude oil (bbls.) 141
Natural gas (Mcf) 5,469

Average number of employees in:
Oil and natural gas extraction 4,500
Refining 408
Transportation 4,926
Wholesale 1,434
Retail 5,183
Total petroleum industry 16,451

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	2	12	14
Production	3	7	10
Net annual change	-1	5	4
Proved reserves	33	92	125

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	3	259	262
Production	12	170	182
Net annual change	-9	89	80
Proved reserves	141	2,299	2,440

Cost of drilling and equipping wells:

(Appalachia)	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	87,906	96,388	24.78
Gas	271,146	146,724	34.30
Dry	17,183	108,066	27.4
Total	376,234	128,892	31.15

Number of producing stripper wells 15,790
Number of stripper well abandonments 50

Stripper well crude oil production:
(bbls.) 2,572,068
(b/d) 7,028
Percentage of oil produced by stripper wells 98%

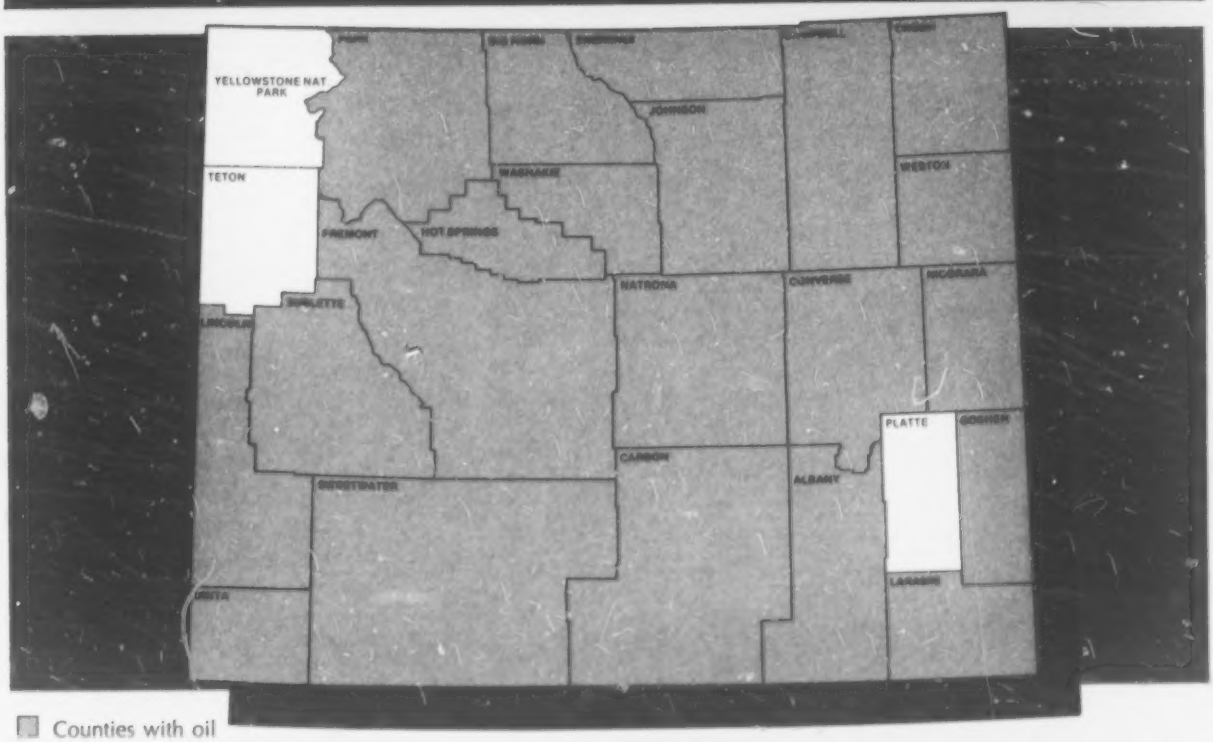
Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 13,021
Secondary 19,531
Total 32,552

Percentage of total value of principal mineral production:
Crude oil — ranked 5th ..... Less than 1%
Natural gas — ranked 2nd 12%

State Energy Contact

West Virginia Department of Mines
Oil and Gas Division
1615 Washington Street, East
Charleston, WV 25311
(304) 348-3500

WYOMING



Counties with oil and/or gas production

Background Information

Number of counties 23
With oil and/or gas production 20

First year of production:
Crude oil 1894
Natural gas 1889

Year and amount of peak production:
Crude oil — 160,345 thous. bbls. 1970
Natural gas — 516,683 MMcf 1984

Deepest producing well: (ft.)
Crude oil 19,612
Natural gas 24,818

Year and depth of deepest well drilled: (ft.)
1979 25,764

Cumulative number of total wells drilled as of 12/31/89: (excluding service wells)

Oil wells	26,746	51%
Gas wells	3,890	7%
Dry holes	21,966	42%
Total	52,602	100%

Cumulative crude oil wellhead value as of 12/31/89: (thous. $) $43,414,695

Cumulative production & new reserves as of 12/31/88: (latest available data)

	Crude oil	NGL (mill. bbls.)	Total	Natural gas (Bcf)
Reserves	6,271	1,213	7,484	24,369
Production	5,468	526	5,994	13,287

Value of Oil and Gas

Average 1989 wellhead price:
Crude oil ($/bbl.) $16.73
Natural gas ($/Mcf) $1.16

Wellhead value of 1989 production: (thous. $)
Crude oil $1,802,038
Natural gas $695,707
Total $2,497,745

Average 1989 natural gas price to: ($/Mcf)
Residential consumers $4.75
Commercial consumers $4.33
Industrial consumers $3.28
Electric utilities $3.61
All consumers $4.44

Severance taxes paid in 1989 (thous. $) $151,698

Compiled by IPAA-September 1990

1989 Industry Statistics

Number of wells drilled:

	Exploratory	Development	Total
Oil	26	125	151
Gas	16	138	154
Dry	147	83	230
Service	- -	15	15
Total	189	361	550

Total footage drilled:

(thous. ft.)	Exploratory	Development	Total
Oil	222.8	689.6	912.4
Gas	60.1	1,145.9	1,206.1
Dry	1,163.3	627.3	1,790.6
Service	- -	63.2	63.2
Total	1,446.2	2,526.0	3,972.3

(Note: Totals may not add due to rounding.)

Number of new-field wildcats drilled 143
New-field wildcat footage (thous. ft.) 1,133.0

State-wide rank in:	Crude Oil	Natural Gas
Wells drilled	10th	13th
Production	6th	5th
Reserves (1988)	4th	5th

Seismic crew months worked 104
Average rotary rigs active 34

Number of producing wells: (12/31/89)
Crude oil 11,539
Flowing 863
Artificial lift 10,676
Natural gas 2,172
Total 13,711

Average production:	thous. bbls.	thous. b/d
Crude oil	107,713	295
NGL (est.)	29,000	79
Total	136,713	374

Natural gas marketed production (MMcf) 599,747
Average output per producing well:
Crude oil (bbls.) 9,335
Natural gas (Mcf) 276,127

Average number of employees in:
Oil and natural gas extraction 8,228
Refining 990
Transportation 1,232
Wholesale 907
Retail 3,229
Total petroleum industry 14,586

1988 Latest Available Data

Petroleum reserve position as of 12/31/88:

(mill. bbls.)	Crude Oil	NGL	Total
New reserves	63	252	315
Production	102	54	156
Net annual change	-39	198	159
Proved reserves	815	992	1,807

Natural gas reserve position as of 12/31/88:

(Bcf)	Associated dissolved	Non-associated	Total gas
New reserves	53	817	870
Production	128	411	539
Net annual change	-75	406	331
Proved reserves	616	10,287	10,903

Cost of drilling and equipping wells:

	Total cost (thous. $)	Cost/ well ($)	Cost/ ft. ($)
Oil	136,562	479,165	77.83
Gas	70,798	956,724	132.42
Dry	110,660	299,892	37.43
Total	318,020	438,840	60.63

Number of producing stripper wells 3,159
Number of stripper well abandonments 327

Stripper well crude oil production:
(bbls.) 5,690,308
(b/d) 15,547
Percentage of oil produced by stripper wells 5%

Stripper oil reserves as of 12/31/88: (thous. bbls.)
Primary 87,935
Secondary 63,255
Total 151,190

Percentage of total value of principal mineral production:
Crude oil — ranked 1st 34%
Natural gas — ranked 3rd 17%

State Energy Contact

Wyoming Oil and Gas Conservation Commission
777 West First Street
P.O. Box 2640
Casper, WY 82602
(307) 234-7147

Exploration

Seismic Exploration Activity

(crew months)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	126	156	116	105	157	78	16	18	23	4
Alaska	37	82	129	58	79	48	16	5	22	21
Arizona	35	33	9	4	7	4	5	1	0	5
Arkansas	37	67	117	117	40	57	12	1	7	16
California	157	192	221	186	152	149	125	113	86	73
Colorado	87	56	141	176	208	131	84	109	58	88
Florida	21	42	20	37	10	18	6	8	22	3
Illinois	5	9	16	11	13	11	1	0	2	2
Indiana	6	0	1	3	13	3	0	1	5	0
Kansas	76	65	98	75	114	69	35	19	43	312
Kentucky	23	12	4	24	3	3	1	0	1	1
Louisiana	654	501	563	423	436	280	157	91	79	68
Maryland	4	6	2	2	1	0	1	0	5	0
Michigan	145	239	159	160	144	241	259	296	237	85
Mississippi	168	175	180	124	85	78	38	14	41	3
Montana	202	388	224	156	125	43	47	28	19	7
Nebraska	13	17	20	14	16	8	7	10	5	51
Nevada	47	41	61	39	54	60	16	6	22	8
New Mexico	120	136	156	116	114	63	71	46	68	38
New York	11	7	7	7	12	9	7	0	0	0
North Dakota	242	268	252	114	74	79	42	37	35	4
Ohio	3	8	3	15	12	9	2	12	0	2
Oklahoma	169	301	256	316	231	202	130	80	152	79
Oregon	9	27	27	13	33	19	8	10	8	2
Pennsylvania	39	49	37	27	3	17	13	0	3	0
South Dakota	2	3	9	14	4	0	7	†	0	0
Tennessee	30	34	24	17	19	4	0	2	1	0
Texas	1,438	1,745	1,583	1,353	1,199	932	481	316	388	206
Utah	158	122	127	111	121	29	10	21	12	14
Virginia	24	31	18	9	3	6	7	0	3	0
West Virginia	24	23	9	17	17	4	2	0	2	0
Wyoming	274	317	253	323	306	163	114	64	98	104
Other	227	269	258	208	297	80	46	32	11	0
Total Land	**4,613**	**5,421**	**5,100**	**4,374**	**4,102**	**2,897**	**1,766**	**1,337**	**1,462**	**1,194**
Total Marine	**348**	**456**	**578**	**569**	**577**	**597**	**258**	**224**	**230**	**198**
TOTAL U.S.	**4,962**	**5,877**	**5,676**	**4,943**	**4,679**	**3,494**	**2,024**	**1,561**	**1,692**	**1,392**

Source: Society of Exploration Geophsysicists
† Averages less than one.

Notes: Data include government and university activity, but exclude gravity and magnetic methods. Totals may not add due to rounding.

Rotary Rigs Operating

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	11	17	15	16	15	22	10	11	12	11
Alaska	14	23	22	14	14	20	13	8	12	11
Arizona	1	1	1	†	0	†	0	0	0	0
Arkansas	27	34	27	26	26	24	9	9	9	9
California	120	155	129	106	107	81	49	61	60	49
Colorado	61	82	60	52	54	50	24	25	29	27
Florida	4	8	5	4	4	7	2	3	2	2
Illinois	25	45	76	61	41	29	6	3	4	5
Indiana	†	1	7	6	7	4	1	1	0	0
Kansas	120	196	157	125	128	92	47	49	40	43
Kentucky	2	5	10	8	8	6	2	2	5	5
Louisiana	427	456	343	282	310	283	142	135	164	140
Michigan	31	37	31	29	34	34	24	22	20	17
Mississippi	58	72	42	33	32	31	15	13	18	17
Montana	49	81	36	24	36	23	10	9	8	5
Nebraska	14	15	9	9	9	7	3	5	3	1
Nevada	5	5	3	1	5	5	3	1	2	2
New Mexico	118	135	103	65	78	71	29	35	37	36
New York	7	12	15	10	9	5	2	2	1	1
North Dakota	83	119	69	42	51	39	13	14	15	15
Ohio	74	98	57	40	51	29	18	20	14	13
Oklahoma	397	698	622	285	319	252	142	136	126	122
Oregon	†	2	†	†	1	1	0	0	1	0
Pennsylvania	29	39	33	22	36	30	17	17	19	17
South Dakota	2	2	2	1	2	2	1	0	1	1
Texas	987	1,317	990	797	850	680	312	293	281	263
Utah	42	69	40	37	45	29	11	7	6	5
Virginia	1	3	3	2	3	4	5	2	2	2
West Virginia	38	45	49	34	38	26	15	13	13	16
Wyoming	155	191	143	96	115	93	36	39	37	34
Other	7	7	6	5	0	1	3	1	3	2
TOTAL U.S.	**2,909**	**3,970**	**3,105**	**2,232**	**2,428**	**1,980**	**964**	**936**	**936**	**869**

Source: Baker Hughes, Inc.
† Averages less than one.

Note: Data represent annual averages, and include offshore rigs.

Drilling

New-Field Wildcat Wells Drilled

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	73	71	79	84	121	143	76	56	85	87
Alaska	16	14	7	0	10	3	0	4	3	6
Arizona	6	8	6	11	2	1	6	4	1	1
Arkansas	109	146	120	148	124	109	68	69	46	46
California	140	132	94	93	112	96	57	82	64	46
Colorado	353	509	366	299	369	355	177	165	175	213
Florida	8	10	12	13	12	10	6	4	6	9
Illinois	107	167	251	428	324	180	129	109	124	93
Indiana	104	95	113	124	97	102	42	47	23	23
Kansas	386	480	362	345	229	254	367	671	407	385
Kentucky	89	99	177	155	136	63	143	132	82	83
Louisiana	673	800	659	553	673	556	324	297	295	205
Michigan	313	402	449	304	537	445	236	241	230	144
Mississippi	280	355	268	252	281	259	104	103	125	105
Missouri	8	28	11	17	13	9	5	5	10	5
Montana	277	400	204	142	202	193	116	75	109	40
Nebraska	237	269	191	187	176	149	58	98	67	46
Nevada	20	25	10	6	31	24	19	11	12	10
New Mexico	214	248	205	118	112	130	47	55	34	29
New York	30	25	5	10	10	6	6	5	5	2
North Dakota	192	332	246	127	180	133	71	61	76	36
Ohio	4	20	35	27	30	22	21	10	9	4
Oklahoma	196	267	263	168	164	144	130	111	112	99
Oregon	24	11	2	0	2	1	1	1	5	8
Pennsylvania	22	16	21	3	18	24	6	11	17	4
South Dakota	29	46	30	33	14	15	16	6	7	6
Tennessee	222	256	328	311	163	100	37	28	9	3
Texas	2,698	3,154	2,293	1,721	1,768	1,488	851	734	726	605
Utah	76	136	108	101	101	42	30	33	34	16
Virginia	2	6	13	13	3	2	6	2	4	1
West Virginia	22	39	26	10	8	6	4	9	3	1
Wyoming	369	551	386	394	507	451	293	270	269	143
Other	33	34	46	44	90	115	75	50	91	56
TOTAL U.S.	**7,332**	**9,151**	**7,386**	**6,241**	**6,619**	**5,630**	**3,527**	**3,559**	**3,265**	**2,560**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells, and dry holes. Federal offshore wells are included in Other.

Exploratory Wells Drilled

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	77	75	79	84	121	143	80	69	100	110
Alaska	16	20	10	3	13	5	2	4	3	6
Arizona	6	8	7	11	2	2	6	4	1	1
Arkansas	111	154	128	155	133	122	85	90	58	58
California	443	538	468	205	210	201	147	174	121	120
Colorado	553	849	653	510	580	563	285	259	292	311
Florida	8	10	12	13	12	10	6	4	7	9
Illinois	487	736	695	878	777	537	312	251	309	263
Indiana	327	347	451	459	409	403	153	154	113	72
Kansas	1,237	1,848	1,838	1,724	2,282	1,503	1,112	1,246	994	870
Kentucky	619	870	1,119	1,421	990	635	237	246	155	145
Louisiana	808	971	801	597	767	621	429	352	345	254
Michigan	316	402	449	306	537	454	260	274	254	177
Mississippi	310	357	268	252	281	260	107	115	138	132
Missouri	22	78	79	45	28	15	5	6	10	5
Montana	382	521	275	185	252	222	143	99	139	62
Nebraska	252	279	197	189	180	160	85	128	91	62
Nevada	20	28	11	8	32	25	20	13	15	12
New Mexico	273	358	314	195	225	288	157	155	111	93
New York	59	79	44	44	30	18	12	8	8	4
North Dakota	256	461	371	211	279	219	126	98	137	80
Ohio	66	151	180	114	110	84	31	43	40	17
Oklahoma	554	733	707	570	518	406	220	245	254	209
Oregon	32	20	8	0	2	3	9	6	11	8
Pennsylvania	255	342	165	92	106	60	25	30	42	30
South Dakota	33	47	33	34	16	16	17	9	9	7
Tennessee	293	333	413	335	164	117	58	34	10	6
Texas	4,354	5,688	5,077	4,566	5,136	4,174	2,523	2,225	1,977	1,657
Utah	112	208	149	133	113	54	38	48	45	25
Virginia	2	6	26	15	3	3	7	2	4	2
West Virginia	119	170	156	66	39	35	14	20	11	6
Wyoming	435	708	537	477	607	552	363	328	322	189
Other	33	35	46	46	94	116	79	51	102	78
TOTAL U.S.	**12,870**	**17,430**	**15,766**	**13,943**	**15,048**	**12,026**	**7,153**	**6,790**	**6,228**	**5,080**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells, and dry holes.
Federal offshore wells are included in Other.

Development Wells Drilled

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	119	142	133	150	266	217	201	205	233	390
Alaska	108	146	200	157	191	98	187	90	132	94
Arizona	0	5	1	1	0	1	0	0	0	0
Arkansas	496	723	680	729	740	875	400	323	372	253
California	2,072	2,593	2,107	2,222	3,299	3,122	1,998	2,188	1,646	1,444
Colorado	857	1,122	1,173	993	1,224	966	472	627	737	591
Florida	11	15	9	7	12	11	8	5	3	2
Illinois	1,828	2,550	2,433	2,318	2,314	1,840	1,040	1,006	778	526
Indiana	406	460	571	542	529	540	274	182	147	112
Kansas	4,923	6,542	6,491	5,407	4,208	3,986	2,038	1,987	2,005	1,548
Kentucky	1,463	2,030	2,583	2,861	2,854	1,976	918	1,162	1,020	696
Louisiana	4,223	4,362	4,244	4,379	6,029	4,754	2,257	2,110	1,879	1,247
Michigan	345	362	435	471	574	394	265	253	383	641
Mississippi	360	431	316	298	331	312	187	201	207	158
Missouri	143	189	104	133	85	62	5	15	2	1
Montana	507	744	536	330	563	385	205	188	208	164
Nebraska	260	327	212	182	187	114	55	65	43	40
Nevada	1	2	0	1	5	9	0	2	3	6
New Mexico	1,793	2,099	1,733	1,306	1,404	1,434	761	628	769	803
New York	436	492	623	401	591	418	273	247	171	92
North Dakota	360	417	325	278	421	278	93	88	118	100
Ohio	5,023	5,926	4,618	4,402	4,893	3,652	1,906	1,808	1,322	1,126
Oklahoma	9,568	12,357	10,660	8,489	9,086	7,133	4,348	3,650	3,004	2,456
Oregon	9	0	0	0	0	2	2	4	4	6
Pennsylvania	2,833	3,517	3,168	2,547	3,548	2,718	1,246	1,232	995	833
South Dakota	41	43	20	18	28	31	0	6	10	7
Tennessee	257	295	214	211	237	120	125	131	75	45
Texas	15,172	20,291	19,707	19,262	21,982	19,225	10,265	8,678	7,542	6,322
Utah	177	347	313	285	381	302	159	71	86	56
Virginia	25	26	71	24	65	85	132	19	25	20
West Virginia	1,752	1,948	1,921	1,600	1,884	1,393	886	843	652	770
Wyoming	1,037	1,289	1,124	1,010	1,156	918	453	451	391	346
Other	11	12	26	46	26	31	334	39	48	35
TOTAL U.S.	**56,616**	**71,804**	**66,751**	**61,060**	**69,113**	**57,402**	**31,493**	**28,504**	**25,010**	**20,930**

Source: American Petroleum Institute

Notes: Data include oil wells, gas wells, and dry holes. Federal offshore wells are included in Other.

We've got the experience and equipment to solve your well control problems

Drilling today's wells requires a delicate balance, and it is possible to lose control. That's when you need Cudd Pressure Control.

We have the most experienced team in the business to handle all types of well control problems and provide solutions at any phase. Whether the situation calls for contingency planning, snubbing, fire-fighting or specialized services; we have the right people to take care of your problem.

We're there to work with you to provide a safe, rapid and cost effective solution to your well control problems. Our goals are to minimize your losses, save your well and preserve its production potential. We'd rather not have your well making headlines. . . unless it's setting production records.

Whether it's valve drilling, hot-tapping, freezing or fire-fighting, we back our people with the best equipment to get the work done safely and efficiently. With a strict emphasis on safety and proper training, we are intent on providing an accident-free work environment.

So, the next time you have any well control problems, remember "We work under pressure, so you don't have to." Call the full service professionals. . .

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Hot Tapping
Freezing
Valve Drilling
BHP/BHT Services
Marine Services
Pipeline Purging

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Total Wells Drilled

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	196	222	214	234	387	360	281	274	333	500
Alaska	125	172	227	164	215	104	199	97	142	116
Arizona	6	14	14	12	2	3	6	4	1	1
Arkansas	612	889	825	907	898	1,018	485	413	430	312
California	3,039	3,838	3,097	2,831	3,947	3,599	2,319	2,565	1,981	1,633
Colorado	1,414	1,977	1,832	1,505	1,810	1,551	1,029	890	1,030	906
Florida	21	25	21	20	24	21	14	9	10	11
Illinois	2,482	3,436	3,253	3,322	3,140	2,381	1,368	1,364	1,232	827
Indiana	751	828	1,051	1,035	1,003	972	446	354	279	189
Kansas	6,266	8,551	8,561	7,337	6,606	5,584	3,157	3,239	3,003	2,421
Kentucky	2,171	3,062	3,804	4,424	3,936	2,643	1,161	1,426	1,184	843
Louisiana	5,147	5,503	5,117	5,037	6,923	5,450	2,690	2,462	2,225	1,507
Michigan	676	787	900	791	1,131	863	542	538	640	820
Mississippi	680	788	584	550	613	572	295	317	345	290
Missouri	266	397	305	245	260	84	10	21	12	6
Montana	902	1,289	816	519	829	609	348	298	355	226
Nebraska	514	608	414	372	378	277	156	204	135	102
Nevada	21	34	13	9	37	34	20	15	20	18
New Mexico	2,126	2,527	2,100	1,539	1,674	1,743	936	801	889	910
New York	507	578	668	447	621	436	285	255	179	96
North Dakota	619	879	696	489	700	497	219	186	256	180
Ohio	5,093	6,082	4,814	4,542	5,036	3,743	1,946	1,851	1,364	1,144
Oklahoma	10,158	13,125	11,390	9,097	9,682	7,617	4,605	3,959	3,314	2,728
Oregon	41	20	8	0	2	5	11	10	18	14
Pennsylvania	3,261	3,962	3,399	2,688	3,727	2,806	1,271	1,263	1,037	863
South Dakota	75	90	53	52	44	49	17	15	20	14
Tennessee	550	628	627	546	401	237	183	165	85	51
Texas	20,038	26,442	25,439	24,526	27,917	24,291	13,269	11,279	9,948	8,314
Utah	291	555	482	418	495	359	199	122	133	83
Virginia	27	32	97	39	68	88	139	21	29	22
West Virginia	1,924	2,170	2,114	1,669	1,959	1,432	900	863	663	776
Wyoming	1,518	2,043	1,719	1,532	1,821	1,533	831	813	730	550
Other	45	47	75	132	126	147	143	91	150	113
TOTAL U.S.	71,562	91,600	84,729	77,050	86,412	71,108	39,480	36,184	32,172	26,586

Source: American Petroleum Institute

Notes: Data include oil, gas and service wells, dry holes, stratigraphic and core tests.
Federal offshore wells are included in Other.

Financial

Cost of Drilling and Equipping Wells—1988

	No. of Wells Drilled	Footage Drilled	Depth per Well (ft.)	Total Cost	Cost per Well ($)	Cost per Foot
Alabama	327	1,501,015	4,590	84,401,101	258,107	56.23
Alaska	130	1,371,754	10,552	336,812,241	2,590,863	245.53
Arkansas	426	1,809,989	4,249	87,055,782	204,356	48.10
California	1,719	4,592,517	2,672	420,518,821	244,630	91.57
Colorado	1,069	5,942,640	5,559	223,479,909	209,055	37.61
Florida	10	131,512	13,151	14,996,483	1,499,648	114.03
Illinois	972	1,944,056	2,000	52,251,086	53,756	26.88
Indiana	215	315,621	1,468	6,221,222	28,936	19.71
Kansas	2,837	9,083,109	3,202	234,516,013	82,663	25.82
Kentucky	878	1,609,964	1,834	54,831,636	62,451	34.06
Louisiana	2,122	16,745,720	7,891	2,408,481,089	1,135,005	143.83
Michigan	631	2,470,950	3,916	219,562,640	347,960	88.86
Mississippi	341	2,991,784	8,774	173,761,360	509,564	58.08
Montana	323	1,329,034	4,115	71,987,977	222,873	54.17
Nebraska	133	711,347	5,348	18,221,099	137,001	25.61
New Mexico	875	5,214,227	5,959	329,996,390	377,139	63.29
North Dakota	258	2,129,658	8,254	111,453,853	431,992	52.33
Oklahoma	3,067	17,807,389	5,806	1,134,793,934	370,001	63.73
Texas	9,328	52,423,977	5,620	3,086,404,661	330,875	58.87
Utah	122	714,395	5,856	64,461,763	528,375	90.23
Wyoming	728	5,245,678	7,206	318,019,675	436,840	60.63
Appalachia	2,919	12,077,973	4,138	376,234,282	128,891	31.15
Federal Waters	135	1,492,018	11,052	669,957,155	4,962,646	449.03
Other	176	559,451	3,179	51,101,966	290,352	91.34
Total Offshore	**866**	**9,334,447**	**10,779**	**2,694,627,091**	**3,111,579**	**288.68**
Total Onshore	**28,875**	**140,881,331**	**4,879**	**7,854,895,047**	**272,031**	**55.76**
TOTAL U.S.	**29,741**	**150,215,778**	**5,051**	**10,549,522,138**	**354,713**	**70.23**
Exploratory Wells	**6,130**	**37,422,487**	**6,105**	**3,011,440,959**	**491,263**	**80.47**
Development Wells	**23,611**	**112,793,291**	**4,777**	**7,538,081,179**	**319,261**	**66.83**

Source: *Joint Association Survey on Drilling Costs*

Notes: Appalachia includes New York, Ohio, Pennsylvania and West Virginia. 1989 data are unavailable.

Financial Statistics

	Rates of Return		Exploration and Development Outlays		
	Oil & Gas Companies	All Mfg. Companies	Larger Companies	Inde pendents	Total Industry
	(%)			(mill. $)	
1962	8.8	9.8	2,848	1,577	4,425
1963	9.8	10.3	2,452	1,673	4,125
1964	10.1	11.6	2,817	1,633	4,450
1965	11.3	13.0	2,847	1,363	4,210
1966	12.3	13.4	2,990	1,260	4,250
1967	12.6	11.7	3,212	1,153	4,365
1968	12.2	12.1	4,087	1,303	5,390
1969	10.9	11.5	3,768	1,482	5,250
1970	9.9	9.3	3,119	1,656	4,775
1971	9.3	9.7	2,740	1,160	3,900
1972	9.6	10.6	4,225	2,255	6,480
1973	10.5	13.0	5,275	2,865	8,140
1974	14.6	14.9	8,550	3,805	12,355
1975	12.9	11.6	6,830	3,420	10,250
1976	15.2	13.9	8,646	5,864	14,510
1977	14.2	14.2	10,305	6,195	16,500
1978	13.8	15.0	11,275	8,025	19,300
1979	18.2	16.5	15,000	11,750	26,750
1980	18.1	14.1	20,553	15,647	36,200
1981	16.4	14.0	29,765	26,710	56,475
1982	13.6	9.2	30,000	25,400	55,400
1983	12.5	10.5	22,650	18,225	40,875
1984	9.9	12.5	22,050	19,400	41,450
1985	9.7	10.0	17,000*	16,000*	33,000*
1986	6.0	9.6	9,000*	8,000*	17,000*
1987	7.4	12.9	10,000*	7,000*	17,000*
1988	15.2	16.4	10,500*	6,000*	16,500*
1989	14.6	13.9	10,000*	5,500*	15,500*

Sources: Chase Manhattan Bank, Federal Trade Commission, and Department of Commerce

*Estimated by IPAA

Drilling Summary 1988

	Oil Wells	Gas Well	Dry Holes	Total Wells
Number of Wells Drilled	12,434	7,820	9,487	29,741
Footage Drilled (thous. ft.)	55,781	42,522	51,912	150,216
Total Cost (mill. $)	3,474	3,600	3,476	10,550
Average Depth (ft.)	4,486	5,438	5,472	5,051
Average Cost per Well ($)	279,408	460,295	366,381	354,713
Average Cost per Foot ($)	62.28	84.64	66.96	70.23

Source: *Joint Association Survey* 1989 data unavailable

Notes: Data includes all costs incurred through Christmastree. Totals may not add due to rounding.

Crude Oil Production By Chase Group

(thous. b/d)	Chase Group	All Other	Total Industry
1956	4,406	2,745	7,151
1957	4,487	2,683	7,170
1958	4,141	2,569	6,710
1959	4,379	2,675	7,054
1960	4,423	2,612	7,035
1961	4,510	2,673	7,183
1962	4,706	2,626	7,332
1963	4,905	2,637	7,542
1964	5,017	2,597	7,614
1965	5,269	2,535	7,804
1966	5,628	2,667	8,295
1967	6,070	2,740	8,810
1968	6,312	2,784	9,096
1969	6,418	2,820	9,238
1970	6,814	2,823	9,637
1971	6,747	2,716	9,463
1972	6,730	2,711	9,441
1973	6,570	2,638	9,208
1974	6,173	2,601	8,774
1975	5,891	2,484	8,375
1976	5,587	2,545	8,132
1977	5,668	2,577	8,245
1978	6,193	2,514	8,707
1979	5,944	2,608	8,552
1980	6,071	2,526	8,597
1981	5,932	2,640	8,572
1982	5,964	2,685	8,649
1983	5,890*	2,798*	8,688
1984	5,870*	3,009*	8,879
1985	5,850*	3,121*	8,971
1986	5,750*	2,930*	8,680
1987	5,650*	2,654*	8,349
1988	5,633*	2,518*	8,151
1989	5,150*	2,463*	7,613
Excluding Alaska North Slope			
1977	5,358	2,576	7,934
1978	5,103	2,514	7,617
1979	4,661	2,608	7,269
1980	4,554	2,526	7,080
1981	4,408	2,640	7,048
1982	4,343	2,685	7,028
1983	4,244*	2,798*	7,042
1984	4,208*	3,009*	7,217
1985	4,071*	3,121*	7,192
1986	3,932*	2,930*	6,862
1987	3,733*	2,654*	6,387
1988	3,616*	2,518*	6,134
1989	3,276*	2,463*	5,739

Source Chase Manhattan Bank & Energy Info. Admin.

* Estimated by IPAA

Severance and Production Taxes

(thous. $)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	30,019	55,757	58,036	72,486	114,302	84,215	64,863	41,592	47,965	49,841
Alaska	506,500	1,170,200	1,581,700	1,493,700	1,393,100	1,389,400	1,108,400	648,500	815,810	913,921
Arkansas	17,858	27,047	24,602	22,812	21,329	20,438	10,312	9,726	8,542	8,478
California*	66,005	300,280	342,941	369,730	405,412	441,413	386,987	358,992	375,851	379,385
Colorado	9,533	18,011	35,867	23,251	20,598	18,480	18,378	17,468	18,034	15,218
Florida	57,317	95,240	79,387	50,835	28,837	21,629	17,436	9,601	9,112	12,881
Indiana	1,756	1,835	1,764	1,578	1,546	1,398	686	867	726	804
Kansas	95,921	104,913	118,304	182,119	243,011	241,700	170,283	159,942	172,185	171,090
Kentucky	876	12,544	13,737	14,283	13,461	23,735	12,507	9,727	14,960	10,675
Louisiana	513,151	803,147	971,677	859,930	803,183	731,760	653,594	439,237	462,703	397,375
Maryland	4	3	2	1	3	1	1	2	2	2
Michigan	48,936	85,554	87,867	83,188	82,556	81,396	64,766	53,023	50,820	49,422
Mississippi	69,011	108,145	113,669	99,159	96,888	82,382	49,355	49,774	44,322	41,669
Montana	35,697	54,710	100,811	119,683	134,862	132,360	116,054	84,054	17,976	58,288
Nebraska	3,655	4,776	5,969	4,325	5,128	4,455	2,717	2,625	2,289	3,015
Nevada	N/A	4	3	25	98	152	134	160	180	161
New Mexico	287,152	369,331	348,437	347,548	381,537	365,029	234,000	262,290	238,760	279,970
North Dakota	53,593	91,210	126,138	166,700	160,436	136,200	81,775	90,665	72,215	59,017
Ohio	1,579	1,731	1,333	1,856	4,396	5,752	6,045	5,316	5,148	4,816
Oklahoma	437,306	601,846	744,629	778,169	709,917	709,364	571,965	372,883	392,637	375,123
Oregon	0	0	427	416	318	429	241	121	139	53
South Dakota	764	1,270	1,707	1,707	1,557	1,824	1,821	979	1,243	1,023
Tennessee	378	530	931	1,398	1,201	980	476	398	343	337
Texas	1,527,867	2,204,602	2,373,846	2,251,314	2,215,647	2,163,018	1,547,926	1,178,052	1,055,563	1,168,018
Utah	10,584	16,041	22,296	26,021	38,443	49,354	46,110	22,781	30,981	23,199
West Virginia	21,852	28,591	37,609	36,590	44,125	50,777	55,331	40,133	29,553	24,965
Wyoming	67,302	260,698	270,372	255,798	270,180	244,316	137,999	138,915	133,836	151,698
TOTAL U.S.	3,864,616	6,418,016	7,464,061	7,264,622	7,192,071	7,001,957	5,360,162	3,997,823	4,001,895	3,821,059

Source: Various state and industry contacts

Notes: Figures include all state and local tax revenues

Production

Producing Crude Oil Wells

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	669	692	719	741	759	810	844	875	892	931
Alaska	642	700	760	672	640	977	1,109	1,216	1,305	1,337
Arizona	32	35	36	34	31	28	24	23	20	25
Arkansas	8,104	8,249	8,629	8,370	9,490	9,700	10,047	8,398	7,865	4,340
California	45,591	47,362	47,231	47,197	48,541	49,874	43,717	45,694	45,819	43,745
Colorado	3,490	2,898	3,113	4,591	5,360	5,457	5,502	5,642	6,286	6,362
Florida	120	117	123	137	138	149	114	122	109	101
Illinois	24,745	26,100	27,600	28,967	30,045	31,100	32,025	32,307	32,262	32,441
Indiana	5,452	5,715	6,047	6,465	6,792	7,164	7,610	7,449	7,449	7,543
Kansas	47,457	42,402	46,189	49,348	49,198	51,888	48,816	48,051	47,484	44,969
Kentucky	14,517	14,585	15,109	15,562	19,980	21,844	22,639	22,974	22,883	22,859
Louisiana	26,014	25,320	22,380	23,376	24,508	26,354	29,921	29,758	27,079	22,872
Michigan	4,109	4,417	4,536	4,913	4,881	5,143	4,885	4,996	4,866	5,557
Mississippi	2,631	3,154	2,640	2,727	2,562	3,468	2,235	2,143	2,050	3,589
Missouri	258	421	499	552	557	581	450	200	286	807
Montana	3,628	3,968	4,311	4,675	4,201	4,196	3,933	4,050	4,128	4,001
Nebraska	1,679	1,870	2,006	2,100	2,095	2,091	1,838	1,852	1,824	1,787
Nevada	25	28	31	34	37	45	29	35	38	46
New Mexico	15,746	16,289	16,526	17,409	18,146	18,697	18,409	18,401	17,890	17,787
New York	5,000	5,300	5,320	5,432	4,678	4,811	4,632	4,428	4,245	4,350
North Dakota	2,290	2,570	2,870	3,734	3,404	3,697	3,543	3,474	3,511	3,442
Ohio	20,451	22,441	24,752	26,287	26,878	27,975	29,937	30,013	30,134	30,194
Oklahoma	78,463	82,639	91,745	95,868	99,600	102,342	100,261	101,745	97,685	96,344
Pennsylvania	27,925	26,138	25,285	24,657	20,739	24,000	20,000	14,271	28,000	27,218
South Dakota	118	120	130	140	138	165	148	149	151	156
Tennessee	441	489	650	693	775	798	806	648	720	713
Texas	174,511	180,627	187,626	195,595	203,664	209,040	201,272	198,163	198,008	186,226
Utah	1,478	1,543	1,583	1,634	1,799	1,944	1,858	1,785	1,849	2,234
West Virginia	14,425	14,700	14,900	15,300	15,475	15,895	15,750	15,850	15,950	15,940
Wyoming	10,227	11,574	11,792	11,349	11,561	12,038	11,879	10,953	11,850	11,539
Federal Waters	3,266	4,535	4,985	4,710	4,104	4,327	4,425	4,487	4,526	3,881
Other	6	11	19	21	31	28	32	29	29	20
TOTAL U.S.	543,510	557,009	580,142	603,290	620,807	646,626	628,690	620,181	623,587	603,356

Source: *World Oil*

Notes: Data include wells on artificial lift and flowing.
Figures quoted as of December 31st each year.

Producing Natural Gas Wells

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	262	309	461	540	664	822	976	1,100	1,190	1,580
Alaska	54	120	123	103	78	81	103	87	108	88
Arkansas	1,188	1,337	1,679	1,850	2,371	2,550	2,719	2,847	2,996	2,830
California	905	1,154	1,050	1,082	1,168	1,319	1,285	1,293	1,269	1,181
Colorado	2,650	3,988	3,667	4,072	3,663	4,529	3,573	3,948	4,326	4,481
Illinois	58	70	60	67	157	190	217	238	277	296
Indiana	655	698	720	736	1,194	1,220	1,289	808	1,298	1,295
Kansas	10,544	11,014	11,254	11,494	11,503	11,776	11,485	11,280	12,538	13,935
Kentucky	7,992	8,033	8,084	8,234	9,013	9,515	9,926	10,493	10,797	11,250
Louisiana	11,486	12,763	13,503	13,894	14,238	14,423	16,479	16,647	16,154	13,873
Michigan	423	667	667	539	749	755	740	670	687	1,265
Mississippi	458	570	520	525	671	690	555	749	535	739
Montana	2,150	2,142	2,069	2,043	2,088	2,033	1,818	2,100	2,023	2,575
Nebraska	22	26	22	24	21	N/A	N/A	N/A	N/A	N/A
New Mexico	13,843	14,968	16,025	16,214	16,401	23,627	22,362	23,413	18,964	19,191
New York	2,200	2,500	2,650	2,969	3,800	4,324	4,927	5,180	5,340	5,184
North Dakota	52	51	66	123	90	98	103	103	101	103
Ohio	16,845	18,619	21,070	24,621	27,846	32,148	32,745	33,369	33,931	34,232
Oklahoma	15,245	16,994	20,742	22,135	23,647	24,756	25,734	26,595	27,307	27,443
Pennsylvania	19,700	20,526	21,500	23,000	24,000	24,000	26,500	26,000	28,000	29,000
South Dakota	10	39	37	40	40	42	44	52	52	54
Tennessee	200	210	360	415	726	820	788	790	764	598
Texas	37,819	39,575	42,295	43,395	44,834	46,615	46,442	45,552	45,984	46,792
Utah	200	226	282	322	659	655	411	497	460	834
Virginia	274	274	290	292	499	581	562	685	710	739
West Virginia	25,600	26,925	28,350	29,675	30,700	32,500	33,150	33,950	34,650	36,240
Wyoming	1,504	1,888	1,889	1,919	1,933	2,161	2,084	2,104	2,147	2,172
Federal Waters	2,853	3,907	4,200	4,000	3,552	3,483	3,404	3,213	3,298	3,124
Other	21	16	28	31	228	52	89	93	98	45
TOTAL U.S.	**175,213**	**189,609**	**203,663**	**214,354**	**226,077**	**245,765**	**250,510**	**253,856**	**256,004**	**261,139**

Source: *World Oil*

Notes: Data include natural gas distillate wells.
Figures quoted as of December 31st each year.

Crude Oil Production

(thous. bbls.)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	22,153	20,680	20,014	18,746	19,804	21,581	21,122	20,607	20,727	19,813
Alaska	591,646	587,337	618,910	625,527	630,401	666,233	681,310	715,955	738,143	683,980
Arizona	406	357	335	237	215	175	161	131	113	138
Arkansas	18,210	18,352	18,849	18,849	18,730	19,044	15,778	14,230	13,456	11,261
California	356,923	384,958	401,572	404,688	412,020	423,877	406,665	395,698	387,204	364,249
Colorado	29,802	30,303	30,545	29,050	28,845	30,246	29,309	28,802	32,819	30,655
Florida	42,886	34,773	25,626	19,476	14,462	11,458	9,383	8,270	7,746	7,289
Illinois	22,702	24,090	27,710	29,200	28,868	30,265	27,245	23,980	22,476	20,377
Indiana	4 978	4,721	5,563	5,321	5,526	5,168	4,759	3,738	3,665	3,310
Kansas	60,151	65,810	70,525	71,594	75,729	75,407	67,034	59,884	58,824	55,484
Kentucky	5,946	6,548	7,349	7,886	7,777	7,790	6,475	5,743	5,458	5,414
Louisiana	469,141	449,315	458,395	479,569	515,268	508,239	512,108	476,030	438,924	404,329
Michigan	33,808	32,665	31,462	31,736	30,554	27,300	25,688	25,972	23,250	21,566
Mississippi	35,945	34,204	33,047	31,455	32,776	30,641	29,997	28,103	27,875	27,403
Missouri	130	226	202	269	285	243	110	110	156	136
Montana	29,584	30,813	30,921	29,225	29,761	29,768	27,072	25,059	23,329	20,956
Nebraska	6,240	6,671	6,872	6,380	6,452	6,943	7,098	6,091	5,978	6,232
Nevada	880	700	613	810	1,907	3,039	2,907	3,112	3,230	3,218
New Mexico	75,324	71,568	71,024	75,169	79,336	78,530	75,712	72,328	71,235	68,713
New York	824	841	834	831	840	1,071	853	710	566	495
North Dakota	40,337	45,424	47,271	50,690	52,652	50,857	45,628	41,351	39,357	36,744
Ohio	12,928	13,551	14,571	14,971	15,271	14,988	13,442	12,153	11,711	10,219
Oklahoma	150,140	154,056	158,621	158,604	168,385	162,739	149,105	134,378	128,975	117,493
Pennsylvania	2,651	3,729	4,282	4,282	4,284	4,851	3,783	3,302	2,807	2,702
South Dakota	765	973	1,158	1,172	1,340	1,596	1,586	1,644	1,657	1,613
Tennessee	743	918	1,132	1,056	920	786	644	614	601	532
Texas	977,436	945,132	925,296	902,676	904,774	888,831	839,606	785,475	762,905	716,061
Utah	24,978	25,860	22,440	29,534	34,689	40,792	39,172	35,788	33,018	28,416
Virginia	10	13	49	65	32	26	18	17	25	21
West Virginia	2,336	3,473	3,227	3,628	3,524	3,555	3,145	2,835	2,621	2,243
Wyoming	126,362	130,563	118,300	118,303	124,269	128,514	121,337	115,267	114,322	107,713
TOTAL U.S.	**3,146,365**	**3,128,624**	**3,156,715**	**3,170,999**	**3,249,696**	**3,274,553**	**3,168,252**	**3,047,378**	**2,983,172**	**2,778,773**
DAILY AVG.	**8,597**	**8,572**	**8,649**	**8,688**	**8,879**	**8,971**	**8,680**	**8,349**	**8,151**	**7,613**

Source: Energy Information Administration

Note: Data include lease condensate.

Natural Gas Production

(MMcf)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	65,294	79,244	75,003	90,801	101,821	107,342	107,184	117,241	129,524	128,317
Alaska	230,588	242,564	264,364	276,691	289,129	321,346	304,841	359,837	378,638	388,247
Arizona	214	187	99	132	45	85	63	60	56	53*
Arkansas	111,808	92,986	124,611	127,561	135,161	155,099	131,075	141,151	166,573	168,300
California	309,783	380,730	383,977	415,324	476,333	491,283	462,218	424,621	359,444	371,854
Colorado	188,001	195,706	209,892	163,545	173,257	178,233	163,684	164,557	191,544	203,847
Florida	40,638	32,470	22,515	21,056	12,585	10,545	8,833	8,281	7,484	7,984
Illinois	1,574	1,295	1,162	1,030	1,530	1,324	1,887	1,371	1,338	1,306*
Indiana	463	330	233	135	394	367	365	217	412	453*
Kansas	735,035	640,114	429,597	434,736	465,979	512,872	465,695	457,050	576,274	587,099
Kentucky	57,180	61,312	51,924	46,720	61,518	73,126	80,195	70,125	73,629	75,810*
Louisiana	6,639,416	6,780,184	6,171,627	5,332,113	5,825,055	5,013,702	4,895,394	5,122,509	5,180,267	5,131,205
Maryland	68	56	36	31	60	39	20	44	29	19*
Michigan	158,302	152,593	153,051	138,910	144,537	131,855	127,287	146,996	146,145	156,501
Mississippi	175,061	181,238	167,231	151,204	157,911	144,172	140,833	139,727	124,053	106,828
Missouri	0	0	0	0	4	4	4	4	4	4*
Montana	51,867	56,565	56,517	51,967	51,474	52,494	46,592	46,456	51,654	51,025
Nebraska	2,550	2,519	2,280	2,091	2,300	1,944	1,403	1,261	910	655*
New Mexico	1,149,781	1,134,078	991,178	895,279	957,366	905,272	702,614	823,773	791,819	849,079
New York	15,643	16,074	15,877	17,836	25,200	31,561	29,964	25,676	23,455	21,344*
North Dakota	42,346	42,573	53,818	69,319	70,496	72,633	55,098	62,258	57,747	53,090
Ohio	138,856	141,134	138,391	151,300	186,480	182,245	182,072	166,593	166,690	166,735*
Oklahoma	1,891,824	2,019,199	1,934,412	1,730,061	1,985,869	1,936,341	1,917,493	2,004,797	2,106,632	2,153,149
Oregon	5,000	5,000	3,399	3,159	2,790	4,080	4,600	3,800	4,000	4,200*
Pennsylvania	97,439	122,454	121,111	118,372	166,342	150,234	159,889	163,318	167,089	168,930*
South Dakota	1,193	1,155	2,331	1,846	1,947	2,558	2,231	3,431	3,920	4,468*
Tennessee	1,241	1,719	2,976	3,950	5,022	4,686	3,464	2,707	2,100	1,636*
Texas	7,115,889	6,910,021	6,468,817	5,938,561	6,185,021	6,052,663	6,151,775	6,126,315	6,286,029	6,206,699
Utah	87,766	91,191	94,255	63,158	74,698	83,405	90,013	87,158	101,372	118,671
Virginia	7,812	8,903	6,880	4,346	8,901	15,041	15,427	19,223	18,424	17,687*
West Virginia	156,551	161,251	150,850	130,078	143,730	144,883	135,431	160,000	182,000	198,200
Wyoming	409,541	410,499	424,657	443,988	516,683	416,565	403,266	497,980	509,058	599,747
TOTAL U.S.	**19,888,724**	**19,965,344**	**18,523,071**	**16,825,300**	**18,229,638**	**17,197,999**	**16,790,910**	**17,348,537**	**17,808,313**	**17,943,142**

Source: Energy Information Administration
*Estimated by IPAA

Notes: Data represent marketed production.
All 1988 figures are revised.

Stripper Wells

Stripper Well Production

(thous. bbls.)	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	144	125	122	158	173	172	189	191	193	301
Arizona	5	16	23	24	26	29	28	25	30	29
Arkansas	7,231	5,690	5,465	5,132	7,118	5,653	5,286	5,114	4,888	6,688
California	45,521	44,110	54,804	55,419	55,993	57,125	41,573	37,182	37,796	38,076
Colorado	1,955	1,989	2,159	2,204	3,630	3,330	2,682	6,216	7,323	6,610
Illinois	20,325	20,167	22,238	23,989	25,889	25,984	27,719	24,157	21,682	20,026
Indiana	4,557	4,019	4,781	4,568	4,336	4,401	4,104	3,827	3,657	3,576
Kansas	43,948	44,545	45,010	47,629	48,267	48,665	50,861	61,435	57,803	57,051
Kentucky	4,549	4,573	4,479	5,144	5,522	6,630	6,696	5,514	4,882	4,564
Louisiana	7,681	7,657	9,012	9,172	9,000	9,844	9,000	10,059	8,810	8,242
Michigan	5,621	4,717	2,449	2,820	3,145	3,228	3,272	2,782	2,674	3,891
Mississippi	1,601	1,890	3,805	2,237	1,286	1,330	1,721	1,121	1,270	780
Missouri	54	127	226	53	271	271	250	182	101	147
Montana	2,830	2,710	2,748	2,881	3,104	2,577	2,937	2,709	2,651	2,564
Nebraska	1,866	2,237	2,510	2,879	3,418	2,974	2,947	2,617	2,688	2,446
Nevada	0	0	0	9	0	0	0	0	0	0
New Mexico	12,068	12,924	13,463	14,207	14,722	15,016	15,367	14,747	14,377	14,653
New York	855	824	849	719	774	680	601	489	511	485
North Dakota	1,250	1,225	1,386	1,493	1,537	1,756	1,905	1,693	1,833	1,898
Ohio	8,367	9,050	9,486	10,199	10,480	10,690	10,491	9,767	8,829	8,508
Oklahoma	76,001	79,945	83,249	94,237	94,430	94,046	91,842	95,903	109,082	109,440
Pennsylvania	2,817	2,651	3,606	3,718	3,951	4,242	4,257	3,356	2,870	2,583
South Dakota	22	25	39	55	44	82	65	34	57	39
Tennessee	388	293	291	N/A	584	510	451	475	445	489
Texas	136,590	141,825	145,940	143,929	153,689	152,720	158,738	147,986	141,704	140,504
Utah	180	220	377	N/A	543	1,089	1,550	878	935	933
Virginia	4	10	13	49	22	27	21	14	16	16
West Virginia	2,382	2,313	2,607	2,683	3,116	3,270	3,346	2,988	2,765	2,572
Wyoming	5,597	5,211	5,367	6,355	6,944	7,119	7,983	7,984	6,963	5,690
TOTAL U.S.	**394,405**	**401,095**	**426,502**	**441,951**	**462,013**	**463,459**	**455,882**	**449,446**	**446,837**	**442,800**

Sources: Interstate Oil Compact Commission and National Stripper Well Association

Notes: 1989 data are unavailable.
Totals may not add due to rounding.

World Crude Oil Reserves

	United States	Canada	Latin America	Middle East	Africa	Asia Pacific	Western Europe	Communist Nations	Total World
(mill. bbls.)									
1977	31,780	5,971	40,270	366,166	59,200	19,749	26,863	98,000	645,805
1978	31,335	6,860	41,247	369,996	57,892	20,007	23,966	94,000	641,772
1979	29,810	6,800	56,473	361,947	57,072	19,355	23,476	90,000	642,175
1980	29,805	6,400	69,490	362,071	55,148	19,631	23,085	86,300	651,930
1981	29,426	7,300	84,982	362,840	56,172	19,151	24,635	85,845	670,350
1982	27,858	7,020	78,482	369,286	57,822	19,756	22,924	85,115	668,262
1983	27,735	6,730	81,676	370,101	56,907	18,969	23,020	84,600	669,738
1984	28,446	7,075	83,316	398,381	55,541	18,530	24,426	84,100	699,813
1985	28,416	6,500	84,242	398,036	56,734	18,856	26,413	81,370	700,567
1986	26,889	6,850	88,755	401,879	55,194	19,024	21,938	79,250	699,779
1987	27,256	6,825	114,321	564,680	55,250	19,354	22,448	79,200	889,334
1988	26,825	6,786	121,951	571,519	56,964	21,367	18,557	83,800	907,768
1989	25,860*	6,133	125,027	660,247	58,387	22,545	18,822	84,100	1,001,572*

Sources: Energy Information Administration, and *Oil and Gas Journal*

Notes: Totals may not add due to rounding.
Data quoted as of December 31st.
* Preliminary estimate

EMPLOY THE BEST...
NATURAL GAS CLEARINGHOUSE

Natural Gas Clearinghouse is a full service natural gas marketing company specializing in:

- Natural Gas Purchases & Sales
- Gas Transportation Services
- Gas Supply Management
- Consulting Services
- Pipeline Investments
- Reserve Acquisitions
- Gas Exploration and Production
- Monthly Survey of Domestic Spot Market Prices
- Oil and Gas Futures

Natural Gas Clearinghouse
13430 Northwest Freeway, Suite 1200
Houston, TX 77040
(713) 744-1777
Fax# (713) 744-1757

Producing Stripper Wells

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Alabama	78	68	73	92	95	98	100	124	122	148
Arizona	8	10	12	14	17	14	14	16	15	13
Arkansas	6,767	6,820	5,847	5,167	7,218	4,738	4,942	4,416	4,438	7,597
California	25,957	25,400	26,566	26,354	26,358	26,650	29,230	29,044	26,988	26,527
Colorado	1,074	1,143	1,255	1,354	1,861	1,690	1,798	4,269	5,097	5,069
Illinois	23,860	24,501	25,472	26,813	28,566	29,942	30,593	31,649	31,883	32,358
Indiana	5,092	5,022	5,874	5,353	5,854	6,134	5,457	5,165	4,985	6,171
Kansas	44,686	41,876	42,924	44,521	47,592	45,749	48,235	50,182	51,953	46,720
Kentucky	14,028	14,075	14,130	14,275	17,000	16,433	17,674	17,992	18,073	18,306
Louisiana	12,131	15,889	15,950	12,010	16,500	16,500	16,000	15,500	15,000	16,500
Michigan	3,405	3,325	3,057	3,361	3,367	3,500	3,475	3,285	3,015	3,040
Mississippi	813	1,523	2,138	1,923	837	837	811	681	644	606
Missouri	157	301	440	530	548	548	429	388	289	700
Montana	1,996	2,082	2,058	2,243	2,673	3,085	3,376	3,493	3,300	3,267
Nebraska	1,037	1,223	1,414	1,585	1,672	1,707	1,716	1,637	1,589	1,505
Nevada	0	4	0	0	0	0	0	0	0	0
New Mexico	11,829	12,519	13,226	13,882	14,280	14,749	15,199	14,466	14,622	14,723
New York	5,000	5,220	5,345	5,259	4,228	4,532	4,448	4,309	4,221	4,011
North Dakota	782	878	836	959	922	1,016	1,091	1,106	1,125	1,186
Ohio	18,222	19,650	21,982	22,966	24,263	25,129	26,412	28,652	28,908	29,251
Oklahoma	64,893	66,128	69,781	73,328	77,729	82,431	83,034	84,425	77,154	74,598
Pennsylvania	27,925	25,991	25,285	23,438	21,831	19,540	11,877	14,271	13,255	17,303
South Dakota	10	12	23	33	33	30	24	17	27	17
Tennessee	318	387	398	N/A	716	689	952	848	853	934
Texas	98,487	103,594	107,596	111,671	117,178	126,202	130,311	123,796	123,945	123,802
Utah	106	125	196	N/A	217	348	519	853	824	796
Virginia	7	8	12	20	26	32	30	49	51	53
West Virginia	14,000	14,150	14,300	14,550	14,900	15,200	15,500	15,800	15,925	15,790
Wyoming	3,642	3,252	3,349	4,792	5,020	5,020	5,200	3,996	3,486	3,159
TOTAL U.S.	**386,310**	**395,176**	**409,539**	**416,493**	**441,501**	**452,543**	**458,447**	**460,429**	**451,787**	**454,150**

Sources: Interstate Oil Compact Commission and National Stripper Well Association

Notes: 1989 data are unavailable.
Figures quoted as of December 31st each year.

Prices

Crude Oil Wellhead Prices

($/bbl.)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	20.57	35.80	32.32	30.07	29.39	25.77	13.91	16.76	13.86	17.26
Alaska	15.63	23.60	20.08	17.92	18.13	17.12	6.71	10.95	8.48	12.08
Arizona	12.30*	24.00*	31.00*	30.00*	28.00*	27.00*	15.15*	17.35*	14.57*	18.30*
Arkansas	24.17	33.69	30.12	28.28	28.15	25.79	14.54	17.23	14.41	17.34
California	23.87	26.80	24.58	22.61	22.09	22.14	11.90	13.91	10.97	14.05
Colorado	22.91	35.69	31.56	28.92	28.09	25.64	13.98	17.71	14.83	18.84
Florida	18.84	25.00*	32.00*	31.10*	31.00*	29.00*	23.13*	16.05*	16.43*	11.75*
Illinois	35.78	36.03	31.69	29.12	28.76	26.90	14.70	17.53	14.79	18.36
Indiana	35.91	36.07	31.66	29.06	28.72	26.82	14.55	17.49	14.78	18.37
Kansas	34.20	35.80	30.79	28.45	27.99	25.33	14.02	17.37	14.55	18.18
Kentucky	34.98	35.90	31.19	28.60	28.24	26.20	14.20	17.19	14.58	18.36
Louisiana	19.87	35.45	32.44	30.02	29.67	27.22	15.32	17.97	15.22	18.34
Michigan	23.54	35.74	31.80	28.93	28.54	26.16	14.61	17.63	14.92	18.08
Mississippi	20.85	30.47	29.04	26.76	27.26	25.51	13.63	16.78	13.98	17.00
Missouri	37.75*	34.38*	31.25*	31.20*	27.50*	25.00*	15.25*	17.25*	14.50*	17.75*
Montana	20.53	34.69	31.25	28.80	28.07	25.29	13.58	16.57	13.84	17.03
Nebraska	30.60	35.32	30.98	28.58	27.83	25.42	13.70	17.07	14.08	17.36
Nevada	16.65*	23.96*	23.95*	23.80*	25.80*	26.00*	12.00*	11.50*	12.50*	15.80*
New Mexico	24.06	35.04	31.82	29.26	28.69	26.84	14.93	17.58	14.78	17.86
New York	37.39	34.15	30.91	28.19	27.70	25.19	16.03	17.40	16.00*	17.70*
North Dakota	26.42	35.63	31.89	29.27	28.39	25.32	13.54	16.74	13.85	17.12
Ohio	36.64	36.11	30.90	28.14	27.71	25.11	15.51	17.42	15.19	18.06
Oklahoma	29.25	35.43	32.04	29.67	29.11	26.28	14.47	17.62	14.86	18.23
Pennsylvania	37.46	36.03	30.77	28.28	27.71	25.05	15.77	17.43	15.26	18.15
South Dakota	28.81	35.55	31.63	29.10	28.36	25.79	13.81	16.96	14.04	17.33
Tennessee	34.29	33.00*	32.10*	32.00*	28.00*	26.00*	15.00*	15.84*	13.99*	18.00*
Texas	21.84	35.06	31.77	29.35	28.87	26.80	14.73	17.54	14.71	17.81
Utah	19.79	34.14	30.50	28.12	27.21	23.98	13.33	17.25	14.24	18.60
Virginia	37.87*	35.00*	30.00*	27.00*	27.00*	24.00*	14.50*	16.58*	13.95*	18.17*
West Virginia	36.92	35.63	29.98	27.27	26.90	24.35	14.68	16.56	14.35	17.18
Wyoming	21.34	32.30	29.37	27.19	26.73	24.67	12.94	16.44	13.47	16.73
TOTAL U.S.	**21.59**	**31.77**	**28.52**	**26.19**	**25.88**	**24.09**	**12.51**	**15.41**	**12.58**	**15.85**

Source: Energy Information Administration
* Estimated by IPAA

Note: Data represent average first purchase prices of crude oil at the lease or wellhead.

GAS COMPRESSORS
ARIEL CORPORATION
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25-3600 BHP

Natural Gas Wellhead Prices

($/Mcf)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	3.19	4.77	3.44	4.28	3.73	3.71	2.89	2.97	2.65	1.25
Alaska	.73	.62	.63	.73	.73	.74	.50	.94	1.27	1.20
Arizona	1.15	1.85	2.59	3.08	2.90	2.80*	2.15*	1.75*	1.80*	1.80
Arkansas	.70	1.81	2.13	2.29	2.54	2.55	2.51	2.29	1.94	1.55
California	2.17	2.57	3.09	3.57	3.80	3.36	2.89	2.37	2.39	1.82
Colorado	1.47	1.97	3.17	3.38	3.43	2.90	2.05	1.76	1.59	1.52
Florida	1.73	2.71	2.46	2.33	2.57	2.43	1.20	1.68	1.53	1.10
Illinois	1.90	2.47	2.62	2.84	2.78	2.77	2.57	2.24	2.19	2.25
Indiana	1.35	2.08	1.55	2.09	3.38	2.51	1.23	1.71	1.57	1.70
Kansas	.77	.92	1.51	1.57	1.49	1.27	1.21	1.15	1.36	1.43
Kentucky	.89	1.01	1.52	1.51	1.70	2.39	1.88	1.82	2.56	2.60
Louisiana	1.61	2.07	2.60	2.67	2.73	2.66	2.21	1.78	1.81	1.82
Maryland	.45	.48	.77	.56	.55	.59	.58	.54	.93	.84
Michigan	2.36	2.86	3.19	3.58	3.76	3.60	3.60	3.24	3.18	3.02
Mississippi	2.32	3.21	3.91	3.78	3.47	3.17	2.13	1.94	1.86	2.00
Missouri	2.00*	2.50*	3.00*	3.45*	3.75	3.50	3.75	3.75	3.75	3.80
Montana	1.45	1.91	2.15	2.41	2.46	2.39	2.05	1.80	1.70	1.50
Nebraska	.83	1.45	1.99	2.93	2.24	3.01	2.82	2.42	2.66	2.23
New Mexico	1.76	2.13	2.47	2.68	2.71	2.62	1.87	1.66	1.70	1.57
New York	1.95	2.67	3.75	3.85	4.00	3.37	3.39	2.00	2.30	2.20
North Dakota	1.19	1.94	2.30	2.27	2.26	1.90	1.35	1.30	2.00	1.00
Ohio	1.98	2.17	2.71	3.24	3.19	3.08	2.84	2.58	2.55	2.55
Oklahoma	1.51	1.88	2.74	2.83	2.72	2.47	1.71	1.47	1.55	1.59
Oregon	2.40	2.60	3.33	3.33	2.78	2.40	2.00	1.45	1.60	1.40
Pennsylvania	2.13	2.33	2.80	3.00	3.25	3.16	2.50	2.25	2.15	2.22
South Dakota	2.45	2.75	3.08	3.37	3.67	2.51	2.46	2.71	1.95	1.10
Tennessee	1.76	2.55	3.00	2.50	3.50	2.48	1.78	1.31	1.50	1.65
Texas	1.57	1.87	2.17	2.36	2.45	2.33	1.65	1.47	1.51	1.53
Utah	1.12	1.10	3.06	3.40	4.08	3.52	2.90	1.88	2.39	2.25
Virginia	2.85	2.15	3.69	3.30	3.00	3.02	2.45	2.08	2.08	2.19
West Virginia	3.00	3.00	3.20	3.10	3.45	3.85	3.90	3.85	3.05	3.10
Wyoming	1.92	2.77	3.22	3.18	3.32	3.01	2.52	1.76	1.53	1.16
TOTAL U.S.	**1.59**	**1.98**	**2.46**	**2.59**	**2.66**	**2.51**	**1.94**	**1.67**	**1.69**	**1.71**

Source: Energy Information Administration

Note: All 1989 prices for states are estimated by IPAA.

Refiner Acquisition Cost of Crude Oil

($/bbl.)	Domestic	Imported	Composite
1969	3.37	2.80	3.29
1970	3.46	2.96	3.40
1971	3.68	3.17	3.60
1972	3.67	3.22	3.58
1973	4.17	4.08	4.15
1974	7.18	12.52	9.07
1975	8.39	13.93	10.38
1976	8.84	13.48	10.89
1977	9.55	14.53	11.96
1978	10.61	14.57	12.46
1979	14.27	21.67	17.72
1980	24.23	33.89	28.07
1981	34.33	37.05	35.24
1982	31.22	33.55	31.87
1983	28.87	29.30	28.99
1984	28.53	28.88	28.63
1985	26.66	26.99	26.75
1986	14.82	14.00	14.55
1987	17.76	18.13	17.90
1988	14.74	14.56	14.67
1989	17.88	18.08	17.97

Source: Energy Information Administration

Retail Gasoline Prices

(¢/gal.)	Excluding Taxes	Taxes	Pump Price
1971	23.88	10.94	34.82
1972	24.31	11.13	35.44
1973	26.93	11.20	38.13
1974	40.40	11.30	51.70
1975	45.67	11.31	56.98
1976	47.48	11.45	58.93
1977	50.82	11.52	62.34
1978	53.06	11.57	64.63
1979	73.38	11.71	85.09
1980	107.07	11.83	118.90
1981	119.91	13.01	132.92
1982	111.29	14.23	125.52
1983	102.69	19.19	121.88
1984	99.57	21.14	120.71
1985	93.91	21.86	115.77
1986	69.57	22.10	91.67
1987	72.12	23.28	95.40
1988	70.59	23.93	94.52
1989	76.82	24.50	101.32

Source: *Oil and Gas Journal*

Note: Motor gasoline prices represent regular leaded prior to 1985, and regular unleaded thereafter.

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WILSON

Wilson Supply Co.: 61 Locations, Dependably Serving The Oil/Gas Industry. – Worldwide

Wholesale Prices—Total U.S.

	Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Average of Four Products		Crude Oil
	(¢/gal.)				(¢/gal.)	($/bbl.)	($/bbl.)
1936	6.32	3.94	3.39	1.81	4.41	1.85	1.09
1937	6.68	4.81	3.96	2.08	4.80	2.02	1.17
1938	5.97	4.57	3.62	1.55	4.22	1.77	1.14
1939	5.79	4.16	3.34	1.50	4.06	1.71	1.04
1940	5.26	4.36	3.55	1.74	3.91	1.64	1.02
1941	6.05	4.40	3.67	2.05	4.41	1.85	1.14
1942	6.14	4.56	3.91	2.18	4.54	1.91	1.20
1943	6.32	4.72	4.09	2.34	4.71	1.98	1.20
1944	6.47	4.78	4.34	2.49	4.87	2.05	1.20
1945	6.48	5.18	5.33	2.60	4.93	2.07	1.20
1946	6.60	5.70	5.06	3.05	5.26	2.21	1.39
1947	8.57	7.28	6.51	4.31	6.92	2.91	1.93
1948	10.53	9.92	8.94	5.72	8.81	3.70	2.60
1949	10.71	9.11	7.72	3.31	7.96	3.34	2.54
1950	10.86	9.39	7.97	3.98	8.29	3.48	2.51
1951	11.40	9.85	8.50	4.42	8.79	3.69	2.53
1952	11.38	9.90	8.52	3.84	8.62	3.62	2.53
1953	12.01	10.23	8.83	3.73	8.96	3.76	2.68
1954	11.66	10.40	8.94	3.97	8.88	3.73	2.78
1955	11.62	10.53	9.08	4.53	9.06	3.81	2.77
1956	11.75	10.99	9.45	5.30	9.43	3.96	2.79
1957	12.34	11.54	10.05	6.15	10.10	4.24	3.09
1958	11.74	10.96	9.39	4.82	9.27	3.89	3.01
1959	11.64	11.26	9.31	4.79	9.22	3.87	2.90
1960	11.61	11.17	8.79	4.88	9.15	3.84	2.88
1961	11.62	11.49	9.10	4.85	9.21	3.87	2.89
1962	11.52	11.42	9.11	4.78	9.13	3.84	2.90
1963	11.35	11.51	9.18	4.61	9.01	3.79	2.89
1964	11.27	10.93	8.65	4.50	8.83	3.71	2.88
1965	11.52	11.28	9.04	4.81	9.12	3.83	2.86
1966	11.59	11.49	9.09	4.73	9.15	3.84	2.88
1967	11.84	11.96	9.71	4.53	9.33	3.92	2.92
1968	11.55	12.03	9.84	4.30	9.14	3.84	2.94
1969	11.80	11.98	10.06	4.20	9.27	3.89	3.09
1970	12.33	12.43	10.45	6.14	10.20	4.28	3.18
1971	12.70	12.90	10.75	7.76	10.94	4.59	3.39
1972	12.70	12.87	10.61	7.60	10.87	4.57	3.39
1973	14.72	14.08	12.61	8.45	12.49	5.25	3.89
1974	25.53	24.02	22.57	20.43	23.48	9.86	6.87
1975	30.27	27.41	26.09	22.03	27.03	11.35	7.67
1976	33.82	31.67	30.38	21.66	29.55	12.41	8.19
1977	36.99	35.81	34.41	25.87	33.21	13.95	8.57
1978	39.22	37.23	35.66	23.00	33.72	14.16	9.00
1979	56.84	56.60	54.47	33.63	49.50	20.79	12.64
1980	87.40	80.26	78.21	44.43	72.77	30.56	21.59
1981	101.63	101.03	97.20	61.17	88.75	37.28	31.77
1982	94.56	97.18	91.95	57.80	83.27	34.97	28.52
1983	86.97	85.12	80.05	57.30	76.94	32.31	26.19
1984	81.14	84.75	79.62	59.14	74.49	31.29	25.88
1985	81.11	81.69	76.66	56.41	73.06	30.69	24.09
1986	47.74	49.92	44.91	36.23	43.97	18.47	12.51
1987	53.22	56.75	52.25	45.36	50.89	21.37	15.40
1988	50.31	50.72	46.10	38.72	46.22	19.41	12.58
1989	59.15	60.78	56.02	40.87	53.28	22.38	15.85

Sources: Petroleum product prices from IPAA.
Crude oil wellhead prices from Energy Information Administration data.

Notes: Data reflect price trends only, not actual sale prices.
Motor gasoline prices represent leaded fuel prior to 1982, and unleaded thereafter.

Wholesale Prices—East of California

	Motor Gasoline	Kerosene	Distillate Fuel Oil	Residual Fuel Oil	Average of Four Products		Crude Oil
	(¢/gal.)				(¢/gal.)	($/bbl.)	($/bbl.)
1936	6.12	4.01	3.52	1.86	4.35	1.83	1.11
1937	6.23	4.76	4.07	2.19	4.62	1.94	1.21
1938	5.45	4.39	3.78	1.62	4.00	1.68	1.17
1939	5.29	3.99	3.55	1.57	3.85	1.62	1.04
1940	4.96	4.33	3.80	1.90	3.84	1.61	1.04
1941	5.97	4.38	3.90	2.19	4.45	1.87	1.17
1942	6.28	4.57	4.17	2.26	4.67	1.96	1.23
1943	6.41	4.69	4.19	2.31	4.76	2.00	1.23
1944	6.42	4.73	4.17	2.46	4.81	2.02	1.23
1945	6.36	4.72	4.16	2.59	4.81	2.02	1.23
1946	6.40	5.38	4.84	3.08	5.12	2.15	1.43
1947	8.45	7.14	6.44	4.48	6.89	2.89	1.97
1948	10.21	9.62	8.94	5.90	8.70	3.65	2.63
1949	10.39	8.36	7.34	3.10	7.64	3.21	2.60
1950	10.77	8.76	7.79	4.10	8.22	3.45	2.59
1951	11.26	9.31	8.43	4.47	8.70	3.65	2.58
1952	11.25	9.38	8.40	3.76	8.48	3.56	2.58
1953	11.79	9.40	8.45	3.59	8.71	3.66	2.71
1954	11.43	9.55	8.71	3.92	8.68	3.64	2.82
1955	11.42	9.76	9.02	4.66	8.95	3.76	2.81
1956	11.55	10.26	9.48	5.34	9.31	3.91	2.82
1957	12.06	10.64	9.95	6.03	9.86	4.14	3.09
1958	11.61	9.87	9.12	4.56	9.03	3.79	3.03
1959	11.57	10.14	9.36	4.70	9.11	3.83	2.95
1960	11.69	10.01	8.93	4.86	9.14	3.84	2.94
1961	11.72	10.41	9.31	4.82	9.22	3.87	2.95
1962	11.55	10.34	9.27	4.67	9.08	3.82	2.96
1963	11.33	10.44	9.32	4.57	8.96	3.76	2.95
1964	11.29	9.71	8.62	4.56	8.79	3.69	2.93
1965	11.56	10.15	9.00	4.82	9.08	3.81	2.93
1966	11.55	10.41	9.13	4.72	9.08	3.81	2.95
1967	11.76	11.00	9.74	4.55	9.26	3.89	3.00
1968	11.50	11.09	9.81	4.33	9.08	3.81	3.02
1969	11.82	11.03	9.89	4.34	9.25	3.88	3.18
1970	12.57	11.59	10.32	6.35	10.32	4.33	3.26
1971	12.81	12.18	10.66	7.55	10.88	4.57	3.47
1972	12.75	12.14	10.58	7.36	10.78	4.53	3.47
1973	14.83	13.64	12.47	8.48	12.51	5.25	3.99
1974	25.10	24.00	22.20	21.62	23.57	9.90	7.10
1975	30.23	27.61	25.98	23.06	27.31	11.47	7.93
1976	33.71	31.42	29.80	22.24	29.57	12.42	8.50
1977	36.83	36.33	34.57	25.99	33.21	13.95	8.83
1978	38.78	38.00	36.04	23.46	33.73	14.17	9.80
1979	56.29	56.51	53.96	32.63	48.85	20.52	13.20
1980	87.04	80.66	78.12	44.34	72.57	30.48	22.67
1981	101.56	102.36	98.75	61.84	89.26	37.49	34.92
1982	94.41	99.03	92.51	57.30	83.20	34.94	31.72
1983	87.64	87.03	80.77	56.36	77.19	32.42	29.34
1984	81.10	87.29	80.78	58.20	74.49	31.29	28.95
1985	80.87	82.82	76.53	54.73	72.48	30.44	26.59
1986	46.58	51.07	44.80	36.56	43.53	18.28	14.66
1987	52.73	57.76	52.13	45.96	50.86	21.36	17.45
1988	49.69	51.67	45.89	38.18	45.76	19.22	14.58
1989	58.34	60.95	55.00	38.87	52.13	21.89	17.78

Sources: Petroleum product prices from IPAA.
Crude oil wellhead prices derived from Energy Information Administration data.

Notes: Data reflect price trends only, not actual sale prices.
Motor gasoline prices represent leaded fuel prior to 1982, and unleaded thereafter.

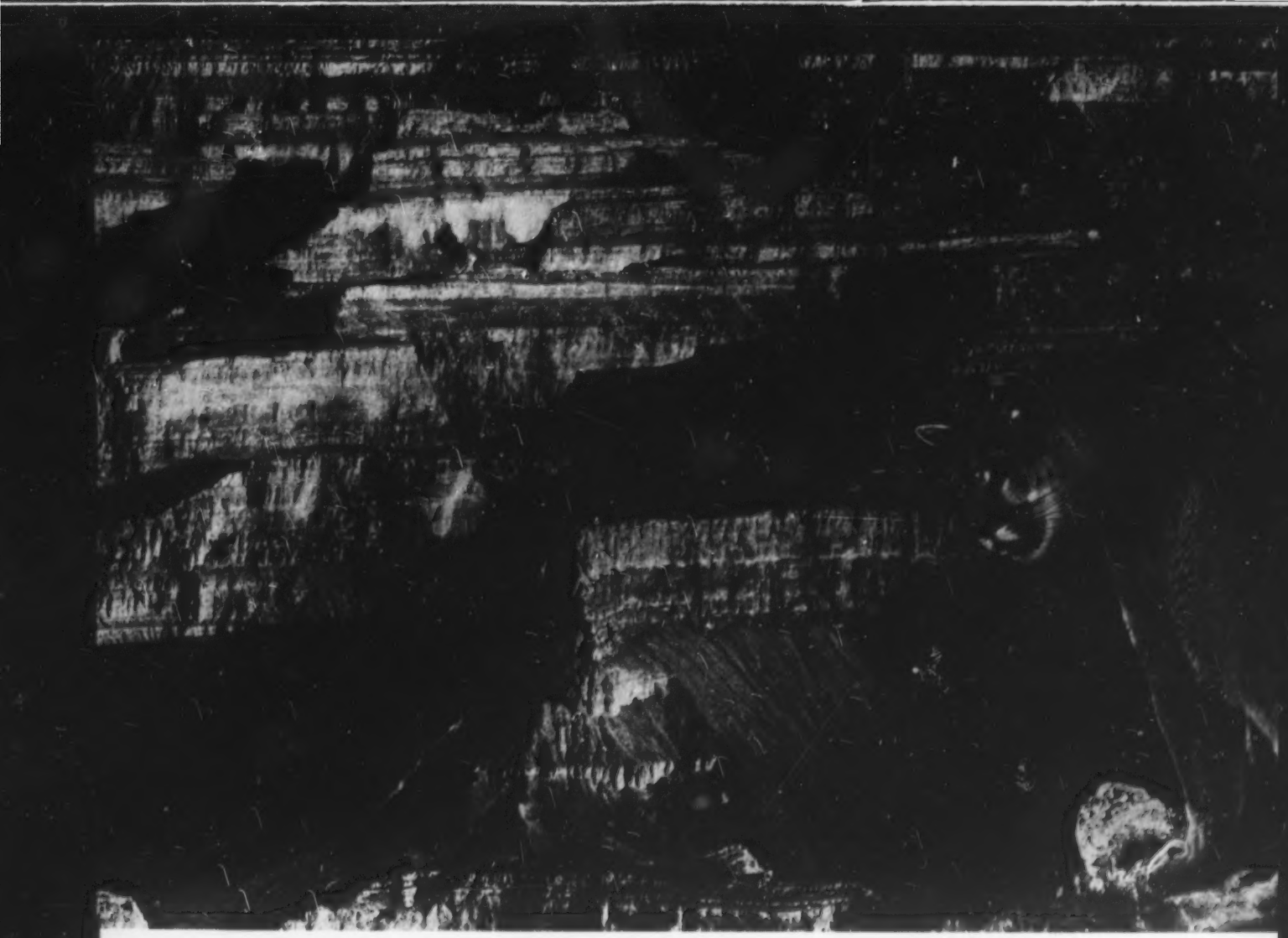
Consumption

U.S. Product Consumption—1989

(thous. bbls.)	Motor Gasoline	Aviation Fuels	Middle Distillates	Residual Fuel Oil	Propane	All Other	Total Products
Alabama	46,237	1,611	17,563	3,035	3,921	12,701	85,068
Alaska	5,133	16,776	9,090	17,857	209	8,611	57,676
Arizona	39,476	6,774	9,644	6,548	1,217	11,173	74,832
Arkansas	31,233	944	14,106	17	3,146	8,678	58,124
California	333,225	85,187	91,505	65,545	9,020	102,582	687,064
Colorado	37,355	4,978	10,436	217	2,788	9,789	65,563
Connecticut	32,012	1,965	21,128	27,004	1,141	14,611	97,861
Delaware	9,291	132	7,360	3,633	1,606	3,865	25,887
Dist. of Columbia	4,060	0	3,695	1,476	0	1,620	10,851
Florida	147,290	28,551	36,550	32,536	8,034	44,397	297,358
Georgia	81,518	15,196	25,983	1,759	5,699	22,843	152,998
Hawaii	8,365	10,699	3,530	13,809	2,024	6,744	45,171
Idaho	11,117	647	5,481	43	506	3,123	20,917
Illinois	104,997	4,373	30,755	2,454	10,152	26,806	179,537
Indiana	61,009	16,427	31,351	2,364	6,619	20,670	138,440
Iowa	33,717	875	17,736	238	6,060	10,289	68,915
Kansas	37,186	3,279	17,297	770	19,167	13,637	91,336
Kentucky	43,037	4,568	19,901	371	3,308	12,494	83,679
Louisiana	59,949	27,671	43,347	34,588	11,915	31,148	208,618
Maine	17,002	1,100	12,036	11,079	570	7,334	49,121
Maryland	46,875	2,978	19,765	12,522	1,073	14,605	97,818
Massachusetts	60,221	8,765	46,213	28,229	1,775	25,485	170,688
Michigan	100,715	7,896	25,361	1,360	13,651	26,148	175,131
Minnesota	48,617	4,938	19,614	1,011	6,493	14,159	94,832
Mississippi	32,158	5,549	24,978	405	8,848	12,626	84,564
Missouri	60,577	6,886	18,902	961	8,170	16,760	112,256
Montana	10,867	819	6,419	109	1,340	3,432	22,986
Nebraska	17,964	649	12,718	952	3,055	6,202	41,540
Nevada	15,836	3,823	6,886	217	803	4,838	32,403
New Hampshire	8,366	240	9,573	1,156	1,077	3,583	23,995
New Jersey	124,838	39,895	90,210	38,154	2,134	51,816	347,047
New Mexico	18,424	1,573	8,354	83	3,201	5,552	37,187
New York	125,533	4,963	64,782	70,516	4,965	47,521	318,280
North Carolina	80,155	5,503	31,896	6,183	7,766	23,080	154,583
North Dakota	8,060	323	6,707	714	2,424	3,199	21,427
Ohio	124,877	9,787	42,906	1,915	6,229	32,595	218,309
Oklahoma	48,494	11,045	18,077	1,638	5,401	14,858	99,513
Oregon	31,727	2,940	17,491	5,774	1,045	10,351	69,328
Pennsylvania	119,285	9,923	63,336	22,730	6,591	38,939	260,804
Rhode Island	14,347	628	11,730	1,842	395	5,080	34,022
South Carolina	40,888	824	14,493	2,885	3,191	10,931	73,212
South Dakota	8,942	1,322	5,857	262	1,265	3,097	20,745
Tennessee	68,120	4,333	29,214	568	2,565	18,393	123,193
Texas	289,917	95,907	129,825	44,717	66,204	109,969	736,539
Utah	19,542	5,325	8,342	332	1,170	6,092	40,803
Vermont	4,153	178	2,472	242	677	1,355	9,077
Virginia	73,051	11,291	35,438	9,565	2,643	23,165	155,153
Washington	58,297	17,452	23,459	13,415	2,412	20,190	135,225
West Virginia	13,782	410	7,602	668	317	3,998	26,777
Wisconsin	48,886	1,496	22,698	609	5,755	13,943	93,387
Wyoming	6,556	293	8,661	817	2,871	3,369	22,567
TOTAL US	**2,873,276**	**497,643**	**1,262,469**	**476,828**	**271,018**	**944,458**	**6,325,692**

Source: Energy Information Administration (preliminary data)

Notes: Middle distillates include kerosene. All other includes naphtha, lubricants, waxes, petroleum coke and still gas.



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Natural Gas Consumption

(MMcf)	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Alabama	242,793	247,289	220,087	203,687	213,516	202,901	187,654	189,112	217,586	228,029
Alaska	122,966	106,207	143,395	141,116	140,535	143,470	127,812	130,478	132,017	127,06
Arizona	144,511	157,993	116,536	102,807	107,434	112,228	88,587	100,517	106,017	126,732
Arkansas	260,319	252,553	213,187	194,079	193,694	174,991	184,148	151,856	197,208	251,616
California	1,729,650	1,789,444	1,647,535	1,502,575	1,633,122	1,806,398	1,496,008	1,889,118	1,762,480	1,821,605
Colorado	241,765	197,998	202,482	195,700	211,752	200,976	181,770	189,364	208,087	207,240
Connecticut	72,512	76,732	77,591	74,211	80,924	77,864	78,264	90,867	87,592	94,554
Delaware	29,797	30,640	27,799	34,873	42,957	38,488	33,005	36,669	29,253	34,978
Dist. of Columbia	27,868	29,023	28,922	28,952	29,054	28,526	29,229	30,728	32,483	32,399
Florida	304,638	324,414	310,076	293,623	291,128	278,666	278,439	288,317	282,792	313,304
Georgia	307,827	308,949	287,463	289,574	301,331	276,446	273,799	297,249	316,108	309,414
Hawaii	3,131	2,899	2,804	2,669	2,375	2,483	2,463	2,610	2,614	2,693
Idaho	44,835	41,034	36,870	32,412	34,977	36,243	32,110	33,583	36,646	41,164
Illinois	1,074,771	1,049,787	974,545	923,921	1,017,180	946,614	911,974	863,261	952,529	983,898
Indiana	480,346	487,670	459,114	421,252	446,210	428,124	389,312	406,661	447,542	455,968
Iowa	256,900	242,357	228,229	212,587	224,314	215,553	199,640	194,914	228,308	214,772
Kansas	411,494	360,833	317,259	276,262	287,328	274,900	241,346	252,726	264,539	253,755
Kentucky	180,368	174,550	159,446	151,187	162,985	149,102	140,704	147,258	160,332	166,129
Louisiana	1,523,691	1,522,261	1,156,364	1,090,109	1,241,850	1,086,006	1,149,230	1,147,961	1,116,676	1,146,915
Maine	2,166	2,321	2,617	2,419	2,444	2,520	2,465	2,629	3,191	3,673
Maryland	156,300	172,915	155,507	143,527	156,868	148,589	150,477	166,428	170,326	185,885
Massachusetts	181,912	183,900	193,506	190,782	207,564	217,503	184,727	225,701	208,998	251,090
Michigan	846,278	783,775	725,050	680,452	698,672	690,493	648,981	635,568	722,562	741,727
Minnesota	276,717	256,094	253,359	236,401	249,040	251,243	237,361	233,532	272,585	287,450
Mississippi	219,828	198,396	224,857	203,222	228,840	195,058	179,610	168,075	171,186	207,523
Missouri	312,872	277,914	274,897	254,823	259,904	255,636	238,144	229,960	248,022	247,574
Montana	54,460	48,533	47,887	42,634	42,914	42,879	37,272	34,687	37,587	41,796
Nebraska	152,283	132,059	132,933	125,134	129,745	120,496	100,762	104,838	117,234	113,403
Nevada	58,284	72,584	46,303	41,830	42,173	39,087	33,746	41,161	48,031	61,786
New Hampshire	9,448	10,154	9,993	9,635	10,506	10,545	10,269	11,951	12,987	13,978
New Jersey	339,358	389,458	374,702	404,398	415,852	376,982	350,632	418,018	411,415	442,987
New Mexico	146,579	134,220	113,564	100,727	101,869	78,453	72,830	79,406	94,853	103,878
New York	733,800	756,522	770,665	716,488	784,243	758,031	724,481	771,003	784,673	820,143
North Carolina	147,448	146,223	135,482	130,792	138,228	129,081	130,787	143,500	146,790	160,767
North Dakota	21,560	20,512	24,374	21,368	25,109	22,682	21,189	18,672	22,876	25,191
Ohio	883,613	855,704	795,963	732,686	767,095	719,393	702,851	697,895	790,436	803,725
Oklahoma	639,642	592,220	556,481	525,165	533,712	473,906	448,808	467,942	460,130	448,364
Oregon	73,083	71,914	67,412	64,042	75,958	78,297	67,349	72,143	78,996	112,253
Pennsylvania	744,909	749,354	660,195	611,203	636,987	588,087	572,209	594,317	626,688	650,977
Rhode Island	27,477	29,086	27,702	28,884	31,557	29,733	26,270	35,865	30,668	33,764
South Carolina	139,214	138,728	95,220	98,998	105,842	95,225	96,175	103,273	109,817	113,126
South Dakota	24,002	21,990	24,910	23,138	24,412	24,881	23,114	20,837	23,974	25,293
Tennessee	213,169	205,979	190,520	183,608	193,489	179,942	174,333	185,200	197,095	201,141
Texas	3,449,507	3,319,594	2,943,812	2,828,001	2,998,055	2,985,916	2,801,490	2,866,540	3,103,792	3,251,282
Utah	106,647	101,007	110,615	104,429	106,188	104,915	90,784	80,494	90,702	96,404
Vermont	3,991	4,383	4,366	4,354	4,862	4,993	5,014	5,181	5,551	6,145
Virginia	149,980	140,663	139,840	135,611	136,757	134,589	135,725	151,880	154,756	171,664
Washington	125,107	122,658	106,942	105,639	124,435	131,712	116,389	127,965	142,825	160,941
West Virginia	127,343	130,713	110,220	100,715	101,023	92,218	89,533	94,065	100,595	103,365
Wisconsin	343,611	316,501	308,039	296,345	302,106	305,571	275,112	275,958	312,832	320,471
Wyoming	45,363	45,228	57,597	47,578	45,775	42,495	39,348	34,290	36,005	35,613
TOTAL U.S.	**18,216,233**	**17,833,935**	**16,295,234**	**15,366,624**	**16,344,890**	**15,811,130**	**14,813,731**	**15,542,243**	**16,318,987**	**17,055,604**

Source: Energy Information Administration

Notes: Data represent natural gas delivered to all consumers.

Industry Employment—1989

	MINING	REFINING		TRANSPORTATION		WHOLESALE	RETAIL	TOTAL
	Oil and Gas Extraction	Petroleum Refining	Oils and Greases	Pipelines, Except Gas	Gas Distribution	Petroleum Products	Gasoline Stations	INDUSTRY
Alabama	1,961	403	48	85	3,287	5,794	8,677	20,255
Alaska	9,084	302	15	893	230	609	1,061	12,194
Arizona	114	N/A	N/A	122	1,794	1,403	9,217	12,650
Arkansas	2,540	454	0	280	2,196	2,828	5,573	13,871
California	31,367	25,652	921	1,344	11,127	14,289	62,670	147,370
Colorado	12,325	538	46	82	1,986	2,345	9,176	26,498
Connecticut	107	0	49	0	2,208	1,772	9,271	13,407
Delaware	11	790	10	3	324	261	1,360	2,759
Dist. of Columbia	2,986	47	N/A	1	651	158	840	4,683
Florida	486	19	258	65	2,250	7,251	30,483	40,812
Georgia	75	84	102	508	3,971	7,099	18,012	29,851
Hawaii	12	464	0	0	358	673	3,441	4,948
Idaho	4	0	0	17	338	1,514	3,425	5,298
Illinois	3,136	7,558	1,195	908	7,749	10,782	27,696	59,024
Indiana	463	2,247	339	391	2,848	3,470	19,276	29,034
Iowa	22	N/A	127	129	1,113	3,324	13,428	18,143
Kansas	8,141	1,926	353	2,032	2,756	2,562	9,339	27,109
Kentucky	1,810	3,893	110	134	2,935	3,192	11,464	23,538
Louisiana	52,700	10,600	636	1,006	6,155	6,797	7,332	85,226
Maine	N/A	0	0	N/A	N/A	1,397	3,912	5,309
Maryland	50	25	292	42	1,132	2,935	13,243	17,719
Massachusetts	71	N/A	437	19	5,089	2,634	15,769	24,019
Michigan	4,090	732	791	278	6,595	6,502	25,955	44,943
Minnesota	145	N/A	N/A	215	2,178	2,851	17,735	23,124
Mississippi	5,375	1,537	171	229	2,120	3,186	6,632	19,250
Missouri	75	N/A	306	202	3,873	6,165	20,739	31,360
Montana	1,712	797	0	77	369	1,344	3,337	7,636
Nebraska	462	N/A	N/A	86	1,444	2,512	7,316	11,820
Nevada	169	7	0	12	826	551	4,337	5,902
New Hampshire	0	0	0	3	264	446	2,932	3,645
New Jersey	88	6,350	811	153	2,352	3,941	18,554	32,249
New Mexico	8,529	684	26	276	2,651	2,291	4,830	19,287
New York	1,618	2,237	430	134	6,634	8,348	27,412	46,813
North Carolina	20	N/A	222	118	2,887	5,854	11,566	20,667
North Dakota	2,541	219	126	139	937	2,225	2,299	8,486
Ohio	5,790	6,548	610	683	7,418	7,385	33,768	62,202
Oklahoma	40,736	4,484	664	1,188	5,259	5,070	7,422	64,823
Oregon	50	N/A	N/A	N/A	1,370	2,723	9,117	13,260
Pennsylvania	3,700	8,300	800	700	8,400	10,100	27,800	59,800
Rhode Island	N/A	0	6	N/A	973	404	2,387	3,770
South Carolina	28	N/A	N/A	N/A	568	3,876	7,996	12,468
South Dakota	109	0	0	54	122	1,570	2,780	4,635
Tennessee	248	387	44	43	1,817	5,715	11,513	19,767
Texas	159,261	25,898	1,096	4,536	28,077	28,183	33,017	280,068
Utah	1,891	826	914	78	2,232	1,157	5,857	12,955
Vermont	N/A	N/A	N/A	N/A	110	462	2,402	2,974
Virginia	266	299	N/A	N/A	3,001	8,669	15,946	28,181
Washington	507	1,710	N/A	88	N/A	2,704	11,060	16,069
West Virginia	4,500	245	163	87	4,839	1,434	5,183	16,451
Wisconsin	28	432	166	577	7,937	11,864	52,927	73,931
Wyoming	8,228	984	6	229	1,003	907	3,229	14,586
TOTAL U.S.	**377,631**	**117,678**	**12,290**	**18,246**	**166,753**	**221,528**	**670,713**	**1,584,839**

Source: Various state government agencies

Note: Data differ from the Bureau of Labor Statistics national averages due to confidentiality rules.

Glossary

Abandonments - The number of producing wells that have been abandoned during a given time period.

Artificial Lifting - Any method used to stimulate the production of crude oil and/or natural gas in excess of the flow resulting under natural reservoir pressures, e.g. pumping, secondary or tertiary recovery.

Associated Gas - Natural gas that occurs with crude oil in the reservoir either as free gas or in solution, also known as gas-cap gas.

Barrel - Standard volumetric measure for petroleum, equivalent to 42 U.S. gallons.

Chase Bank Group - A group of the largest U.S. petroleum companies from which Chase Manhattan Bank gathers annual financial and operating data. All other domestic petroleum companies in the industry are aggregated to represent the independent sector.

Condensate - A mixture of liquid hydrocarbons at atmospheric conditions which occur in a gaseous state underground, sometimes known as distillate or natural gasoline.

Crude Oil - Hydrocarbons in liquid unprocessed form that vary significantly in properties such as API gravity, viscosity, and sulfur content.

Development Well - A crude oil, natural gas or dry hole drilled within an area known to be productive.

Distillate Fuel Oil - One of the petroleum fractions produced by conventional distillate, includes fuel oil and diesel fuel.

Dry Hole - A completed well which is not productive of crude oil and/or natural gas in commercial quantities.

Dry Natural Gas - Natural gas that does not contain dissolved liquid hydrocarbons.

Exploratory Well - A crude oil, natural gas, or dry hole drilled to discover a petroleum formation or its limits.

Gas Well - An exploratory or development well completed for the production of natural gas.

Liquefied Petroleum Gas (LPG) - Butane, propane, and other light products separated from natural gasoline or crude oil by fractionation or other processes. At atmospheric pressure, it reverts to the gaseous state.

Middle Distillates - A general classification of petroleum products that includes distillate fuel oil and kerosene.

Natural Gas - Hydrocarbons in gaseous form or mixed with crude oil.

Natural Gas Liquids (NGL) - Hydrocarbons found with natural gas that are recoverable by condensation or absorption, such as LPG or natural gasoline.

Nonassociated Gas - Free natural gas that does not occur in contact or dissolved with crude oil in the reservoir.

Oil Well - An exploratory or development well completed for the production of crude oil.

Petroleum - Includes in its broadest sense the entire spectrum of hydrocarbons - gaseous, liquid, and solid.

Pipeline - A line of tubes with pumping machinery that transports crude oil or natural gas from the wellhead to the storage tank or petroleum refinery.

Proved Reserves - The estimated quantity of crude oil, natural gas, or NGL that is shown with reasonable certainty to be recoverable from known fields under existing economic and operating conditions.

Residual Fuel Oil - The heavy, high-viscosity leftover from the refining process, used mainly for industrial purposes.

Rotary Drilling Rig - A derrick equipped with modern rotary equipment capable of drilling a bore hole with a bit attached to a rotating column of steel pipe, in contrast to a cable tool rig which drills on the percussion principle.

Seismic Exploration Activity - The search for geological structures which are potential petroleum-bearing formations by interpreting data from seismic shocks.

Severance Tax - A tax levied by some states on each barrel of crude oil or each thousand cubic feet of natural gas produced.

Strategic Petroleum Reserve - Crude oil inventories held in government underground storage for use during periods of supply interruptions.

Stratigraphic Test - A hole drilled to gather information about a stratigraphic formation such as the general permeability and porosity of the rocks; includes core tests.

Stripper Well - A producing well which pumps or "strips" less than 10 barrels of crude oil or 60 Mcf of natural gas per day.

Stripper Well Reserves - The estimated amount of additional crude oil or natural gas which can be recovered by primary means or secondary recovery methods.

Well - A hole drilled to find or produce hydrocarbons, or to provide services related to their production.

Wildcat Well - A type of exploratory well drilled in an unproven area where there has been no previous production.

Peak Year Milestones

Seismic Crew Months Worked	1952	7,958	
Rotary Rigs Active	1981	3,970	
New-field Wildcat Wells Drilled	1981	9,151	
Exploratory Wells Drilled	1981	17,430	
Oil Wells Drilled	1984	43,967	
Gas Wells Drilled	1981	19,742	
Dry Holes Drilled	1981	26,972	
Total Wells Drilled	1981	91,600	
Total Footage Drilled	1981	412,310	thous. ft.
Producing Wells	1985	646,626	
Producing Gas Wells	1989	261,139	
Crude Oil Production	1970	9,637	thous. b/d
Stripper Well Production	1961	1,622	thous. b/d
Petroleum Imports	1977	8,787	thous. b/d
Petroleum Demand	1978	18,847	thous. b/d
Natural Gas Marketed Production	1973	22,648	Bcf
Natural Gas Consumption	1972	22,101	Bcf
Oil Wellhead Price	1981	$31.77	per bbl.
Natural Gas Wellhead Price	1984	$2.66	per Mcf
Natural Gas Imports	1979	1,253	Bcf
Crude Oil Wellhead Value	1981	99,401	mill. $
Natural Gas Wellhead Value	1984	48,492	mill. $
Severance Taxes Paid	1982	7,133	mill. $
Total Drilling Costs	1982	39,428	mill. $
Total Employment	1981	1.9	mill.

IPAA Meetings

1990 Annual Meeting
October 20-23—Loews Anatole, Dallas

1991 Executive Committee Meeting
February 25-27—Washington Court
Washington, D.C.

1991 Midyear Meeting
May 1-4—Marriott Resort Marina
San Diego

1991 Annual Meeting
October 12-15—Marriott City Center
Denver

Advertisers Index

1. Ariel Corp. 101
2. B.J. Services 4,5
3. Citgo Petroleum Corp. 111
4. Coastal Corp. 13
5. Cudd Pressure Control 89
6. Halliburton Res. Mngt. 16
7. Halliburton Services ..... Cover 3
8. Mobil Natural Gas ..... Cover 4
9. NCNB 6
10. Natural Gas Clearinghouse 99
11. Petroleum Information 107
12. Underwriters Indemnity 8
13. Union Drilling 17
14. Western Co. of N. America ..... Cover 2, 1
15. Wilson Supply 103

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Halliburton Services'

FYI

FOR YOUR INFORMATION

Field Reports: BoraGel frac fluid performance.

BoraGel and Nitrogen boost Cherokee Sand well to 70 BOPD.

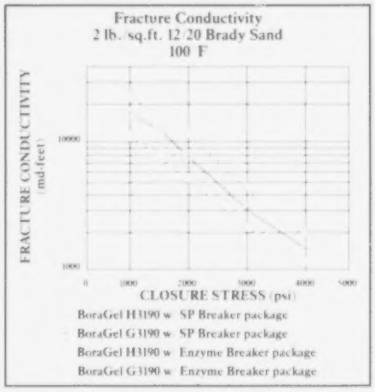
Texas County, Oklahoma — This old well was completed in two separate intervals below 5,700 ft in the Cherokee Sand formation. Even after acidizing, the well's production was 2 BOPH and 130 Mcf/D gas. Operator had experienced quick declines after treatments and wanted Halliburton to help with the problem.

A BoraGel treatment with an agressive proppant schedule was planned for the well. Using a 3-stage approach, a pad of 40% N_2 and 11,000 gal of BoraGel was pumped initially. Second stage was 17,000 gal with 40% N_2 carrying 2 - 5 lb/gal 20/40 sand proppant. Final stage of 5,000 gal, 40% N_2 with 5 - 6.5 lb/gal 20/40 proppant was followed by 980 gal of gel with 40% N_2 as a flush. Pumping rate for all was 10 BPM.

Two weeks after the treatment, the old well was flowing 70 BOPD, 6 BWPD and 300 Mcf/D on a 16/64-in. choke. Operator planned on more BoraGel treatments.

West Texas well goes from 1 to 40 BOPD after BoraGel job.

Crane County, Texas — Completed in the San Andres-Grayburg formation below 2,000 ft, this old well's production was only 1 BOPD and 1 BWPD. Operator asked Halliburton to propose a stimulation procedure.



Here's the high conductivity available for many zones after treating with Halliburton's BoraGel and breaker systems.

The treatment suggested and performed was a BoraGel procedure utilizing 27,600 gal of fluid carrying 100,000 lb of 12/20 sand proppant. Maximum sand concentration was 10 lb/gal with an average rate of 25 bbl/min at an average pressure of 2,840 psi.

The economical treatment paid off handsomely as the production went to 40 BOPD and 0 BWPD.

Alabama coalbed methane well reponds to BoraGel stimulation job.

Jefferson County, Alabama — This new gas well, completed in the Mary Lee and Black Creek coals below 1,750 ft, showed little promise as a gas producer. Operator knew the well had potential and asked Halliburton for a recommendation.

The 2-stage treatment Halliburton designed consisted of almost 75,000 gal of BoraGel fluid carrying 185,000 lb 12/20 sand proppant. Rate was 40 BPM at 1,400 psi. Proppant was ramped at 1-10 lb/gal utilizing the Halliburton APCS blender.

Well stabilized after dewatering with 443 Mcf/D production. The operator congratulated Halliburton on a job well done.

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